GAIL FARBER, Director

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
"To Enrich Lives Through Effective and Caring Service"

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REFER TO FILE

August 02, 2016

ADOPTED
BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

27 August 2, 2016

LORI GLASGOW
EXECUTIVE OFFICER

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

Dear Supervisors:

AGREEMENT BETWEEN THE LOS ANGELES DEPARTMENT OF WATER AND POWER AND THE COUNTY OF LOS ANGELES FOR RECYCLED WATER SERVICE
(ALL SUPERVISORIAL DISTRICTS)
(3 VOTES)

SUBJECT

This action is to enter into an agreement with the Los Angeles Department of Water and Power to purchase recycled water for use by the County of Los Angeles.

IT IS RECOMMENDED THAT THE BOARD:

1. Find that approving the agreement is not a project as defined by the California Environmental Quality Act.

2. Approve and authorize the Director of Public Works or her designee to execute an agreement with Los Angeles Department of Water and Power for the purchase of recycled water at Los Angeles Department of Water and Power's published rates. The term of the agreement will be for 30 years following execution of the agreement by both parties.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

In light of the extended drought in the Southern California region, the use of recycled water is ever more desirable in order to conserve potable water supplies. Recycled water is a reliable source of water that will not be restricted in times of drought and can be purchased at a lower rate than that of

potable water. The Department of Public Works and other County departments may utilize recycled water in several approved applications including, but not limited to, landscape irrigation, dust control on construction projects, and cleaning roads and sidewalks.

Los Angeles Department of Water and Power (LADWP) supplies recycled water that meets the requirements established by the State of California Department of Health Services as found in Title 22 of the California Code of Regulations. LADWP is further required under the California Water Code Section 13523.1(b)(3) to establish and enforce rules and regulations governing the design, construction, and use of recycled water distribution and disposal systems by its customers, including the County. Any County department that plans to purchase and use recycled water under the agreement must obtain approval from LADWP, the County Department of Public Health, and the State Division of Drinking Water, as applicable, for each type of use and for the construction of on-site recycled water systems on County property. Approvals are also necessary for converting water vehicles to be able to transport recycled water.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs the provisions of Operational Effectiveness/Fiscal Sustainability (Goal 1); Community Support and Responsiveness (Goal 2); and Integrated Services Delivery (Goal 3). Approving the recycled water service agreement with LADWP supports these goals by providing County departments with access to a reliable source of water that can be applied to a variety of operational uses while reducing the County's reliance on scarce potable water supplies.

FISCAL IMPACT/FINANCING

There will be no impact to the County General Fund. When the need arises for services under this agreement, financing the required services will be from the appropriate funding sources. Public Works will not order services without the funding authorization of Public Works' Financial Management Branch.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The agreement between LADWP and the County is for recycled water service to be provided by LADWP. The County agrees to utilize recycled water for approved uses in accordance with all State and local rules and regulations. The agreement sets forth terms and conditions for both parties including the rights and responsibilities of LADWP and the County, the rate for the recycled water services to be provided, liability and indemnification, and a term of 30 years from the date of execution of the agreement unless prior amended or terminated.

County Counsel has approved the agreement as to form.

ENVIRONMENTAL DOCUMENTATION

This action does not constitute a project pursuant to the California Environmental Quality Act (CEQA) because it is an activity that is excluded from the definition of a project as defined in Section 15378(b) of CEQA. Approving the agreement is an administrative activity of the government, which will not result in direct or indirect physical changes to the environment.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

Approving this action will not result in any impact on other current services or project.

CONCLUSION

Please return one adopted copy of this letter to the Department of Public Works, Road Maintenance Division.

Respectfully submitted,

GAIL FARBER
Director

GF:DBM:rc

Enclosures

c: Chief Executive Office (Rochelle Goff)
County Counsel
Executive Office
Department of Water and Power (Jennifer Valdez)

Agreement NO. WR-16-_____
BETWEEN THE LOS ANGELES DEPARTMENT OF WATER AND POWER AND THE COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS FOR RECYCLED WATER SERVICE

Agreement NO. WR-16-_____
BETWEEN THE LOS ANGELES DEPARTMENT OF WATER AND POWER AND THE COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS FOR RECYCLED WATER SERVICE

THIS Agreement No. WR-16-_____ (hereinafter referred to as Agreement) is made and entered into by and between the Los Angeles Department of Water and Power, (hereinafter referred to as LADWP), and the County of Los Angeles, acting by and through its Department of Public Works, a political subdivision of the State of California (hereinafter referred to as Customer), collectively referred to as Parties, regarding all recycled water service to the Customer by LADWP.

RECITALS

WHEREAS, the use of recycled water in Southern California is desirable to reduce dependency on imported water supplies, and to increase the overall reliability of water supplies to the region; and

WHEREAS, LADWP desires to conserve potable water supplies by providing recycled water where it is available and prudent to do so; and

WHEREAS, Customer desires to conserve potable water supplies and will benefit by being provided with a reliable source of water that will not be restricted in times of drought and will be sold at a lesser rate than that of potable water; and

WHEREAS, LADWP will supply recycled water that meets the requirements as established by the State of California Department of Health Services as found in Title 22 of the California Code of Regulations; and

WHEREAS, California Water Code Section 13523.1 (b)(3), requires a recycled water agency to establish and to enforce rules and regulations governing the design, construction and use of recycled water distribution and disposal systems by its customers; and

WHEREAS, approved uses of recycled water include, but are not limited to, irrigation of parks, school yards, landscaping, golf courses, and cemeteries; dust control for construction, horse properties, landfill, quarries, and on roads and streets; recreational lakes and ponds; industrial and commercial cooling or air conditioning; toilet and urinal flushing; decorative fountains; cleaning roads, sidewalks, and outdoor work areas; industrial process water and boiler feed; commercial laundries; commercial car washes; construction backfill consolidation, soil compaction, and concrete mixing.

NOW, THEREFORE, in consideration of the foregoing and the benefits, which will accrue to the Parties hereto, the following is understood and agreed to by and between the Parties:

SECTION 1: TERMS AND CONDITIONS TO USE RECYCLED WATER

1.1 LADWP will supply recycled water to Customer, and Customer agrees to utilize recycled water for approved uses in accordance with all State and Local Rules and regulations and in compliance with the following:

a. Schedule D of Rate Ordinance No. 184130 (www.ladwp.com/waterrates)

b. LADWP Rules Governing Water and Electric Service in the City of Los Angeles October 2008 as amended by Board Resolutions 010 331, 010 362, 011 121, and 013 246 (www.ladwp.com/rules)

c. Recycled Water User Manual. (www.ladwp.com/RWirrigation)

d. Title 22, Division 4, Chapter 3, Wastewater Reclamation Criteria; Title 17, Division 1, Chapter 5, Group 4, Articles 1 & 2, of the California Code of Regulations

e. Regional Water Quality Control Board – Los Angeles Section Order No. R4-2011-0032 Amending Order No. R4-2007-0009 (Attachment A) Water Recycling Requirements for Title 22 Recycled Water Issued to City of Los Angeles (Donald C. Tillman Water Reclamation Plant)

f. Regional Water Quality Control Board – Los Angeles Section Order No. R4-2011-0035 Amending Order No. R4-2007-0007 (Attachment B) Water Recycling Requirements for Title 22 Recycled Water Issued to City of Los Angeles (Los Angeles-Glendale Water Reclamation Plant)

g. Regional Water Quality Control Board – Los Angeles Region Order No. 01-043 (Attachment C) Water Recycling Requirements for West Basin Municipal Water District (West Basin Water Recycling Facility) (Title 22 Recycled Water)

h. Regional Water Quality Control Board – Los Angeles Section Order No R4-2011-0033 Amending Order No. R4-2003-0025 (Attachment D) Water Recycling Requirements and Wastewater Discharge Requirements for City of Los Angeles Harbor Water Recycling Project – Nonpotable Reuse Project

i. Regional Water Quality Control Board – Los Angeles Region Order No. 91-101 (Attachment E) Water Reclamation Requirements for City of Burbank Department of Public Works

These sources are hereby incorporated by reference as if set forth at length. LADWP and Customer recognize that the applicable rules and regulations governing recycled water may change and all such future changes may be applicable to LADWP or to Customer, or both.

1.2 Prior to use of recycled water, Customer agrees to:

a. Obtain approval from LADWP and the Los Angeles County Department of Public Health (LACDPH), and State of California Division of Drinking Water (DDW), if applicable, for each type of use, which may require submittal of an engineering report, and may be on a case-by-case basis. Attachment F is provided as a sample engineering report, specifically for the use of recycled water for street cleaning.

b. Obtain approval from LADWP, LACDPH, DDW, if applicable, and other necessary permits and approvals required for the construction of on-site recycled water systems beyond the meter hereinafter referred to as (Customer's Property), and for conversion of water vehicles to transport recycled water. These may include but are not limited to approvals by the City of Los Angeles Department of Building and Safety and DDW.

c. Construct all water systems and retrofit water vehicles as necessary for the distribution and use of recycled water.

d. Comply with inspection and approval of the on-site water facilities and/or water vehicles by LACDPH and LADWP representatives. The inspection may include, but not necessarily be limited to, a cross-connection test; the verification of proper installation and application of backflow assemblies; appropriate signage; and marking of potable, industrial, and recycled water facilities.

e. Designate a Site Supervisor to receive training of the application and maintenance of the recycled water system. Site Supervisor's contact information shall be submitted to LADWP. A Site Supervisor shall be maintained for the lifetime of the recycled water system at the Customer's Property.

1.3 For any new construction or modification of existing onsite potable and recycled water systems and/or water vehicles only as it relates to the Customer's use of recycled water provided by LADWP, Customer shall notify and obtain approval from LADWP and LACDPH.

1.4 Customer gives LADWP the right to publish Customer's anticipated and actual recycled water usage in public documents, including Customer's name.

1.5 LADWP agrees that Customer and any Customer authorized users may use any tertiary fill station owned by LADWP, located in the public right-of-way, for the purpose of utilizing recycled water. The Customer may also use fill stations within its own property.

1.6 Agreement shall apply to all current and future tertiary recycled water fill stations located in public-right-of-way in the LADWP service area. Current tertiary recycled water fill station locations are indicated in Attachment G.

SECTION 2: CHARGES FOR RECYCLED WATER

2.1 Customer's rate shall be set within this Agreement pursuant to Schedule D of Rate Ordinance No. 184130, as amended, which is hereby incorporated by reference as if set forth at length.

2.2 At the time of execution of this Agreement, Schedule D explains that the commodity charge for reclaimed water is set at a rate equal to 80 percent of the commodity charge or base rate ($1.434 hundred cubic feet) and cannot exceed 100% of the commodity charge or base rate ($1.792/hundred cubic feet).

2.3 The rate set in this Agreement can be modified at any time during the term of this Agreement if Schedule D and/or the commodity charges are modified by the Los Angeles City Council.

Effective Date	Base Rate (Westside)	Recycled Water Rate = 80% of Base Rate (Valley and Metro)
07/01/16	$1.792	$1.434
07/01/17	$1.999	$1.599
07/01/18	$2.016	$1.613
07/01/19	$2.095	$1.676

2.4 For fill station use in the public right-of-way, the Customer and any users it authorizes must maintain a log recording details (date, fill station address as shown in Attachment H). A copy of this log will be signed by the Customer and transmitted to LADWP on an annual basis, between July 1 and July 31, via U.S. mail to the following address:

Los Angeles Department of Water and Power
433 East Temple Street, Building 5, Room 101
Los Angeles, California 90012
Attention: Recycled Water Fill Stations

2.5 LADWP will use this information to prepare Customer's bill in accordance with the prevailing Rate Ordinance and Rules of Service as referenced in Section 2.1. Customer shall be required to pay bill within 90 days of receipt. Failure of Customer to pay bill may be considered a breach of this Agreement.

2.6 LADWP will provide Customer with timely notice at Customer's Property should the billing address change. LADWP shall notify Customer if additional fill stations are available. Customer acknowledges that failure to provide a log as specified will result in denial of service.

SECTION 3: TERM OF Agreement

3.1 This Agreement shall be effective for thirty (30) years from the day and year of execution, which shall be the date of the last executed signature. The Parties agree that this Agreement may be amended or terminated at any time by mutual written agreement of the Parties.

3.2 Agreement is binding on and shall inure to the benefit of successors and assigns of Parties. If Customer conveys all or any portion of the Customer Property during the term of this Agreement, it is agreed that recycled water shall remain a source for Approved Uses at the site, subject to the same compliance requirements contained in this Agreement. Customer shall be required to notify any successors and assigns of this Agreement and of the understanding that successors and assigns will be required to enter into a recycled water service agreement with LADWP to continue the use of recycled water at the site. This notification shall be made via letter, with a copy to LADWP.

SECTION 4: OTHER TERMS

4.1 By the Act of Congress that granted the City of Los Angeles rights-of-way to transport the City's water supply from the Owens Valley to Los Angeles, the City is prohibited from ever selling, or letting any Customer, or individual, the right to sell or sublet any of the water sold to it by the City (Act of Congress of June 30, 1906, Pub. Law 395, 34 Stats. 801). The Charter of the City of Los Angeles prohibits LADWP from supplying water to any person or Customer for resale. It is the intent of the Parties that the resale of water shall not occur. Customer agrees that it will not resell any of the water supplied pursuant to this Agreement or any other water supplied by LADWP to Customer for use on City Lands, and the Customer will not bill or collect from any tenant or Customer of water that the Customer supplies any charge for water.

4.2 In the event that the LADWP determines in its sole discretion that the demand for recycled water for use within the City exceeds supply, and upon 60 days written notice to Customer, Customer shall not obtain any water pursuant to this Agreement for use outside the City.

4.2 Neither Customer's nor LADWP's failure to enforce any provision of the Agreement shall be construed as a general waiver or relinquish on its part of any portion of this Agreement.

4.3 Customer hereby undertakes to indemnify, defend, and hold harmless the City of Los Angeles, LADWP, the Board of Water and Power Commissioners, and all of their officers, employees, agents, and assigns and, at the option of LADWP to defend LADWP, the Board of Water and Power Commissioners, and any and all of their officers, employees, agents and representatives from and against any and all suits and causes of action, claims, charges, damages, demands, judgments, civil fines and penalties, or losses of any kind or nature whatsoever (collectively,

CLAIMS), for death, bodily injury, or personal injury to any person, including Customer's employees or agents, or damage or destruction to any property of either party hereto, or to any third person in any manner arising by reason of Customer's use of recycled water, or in maintaining or operating the recycled water system on Customer's Property, including but not limited to, harm resulting from ingesting said water, whether the harm occurs to Customer, its officers, agents, employees, Customer authorized users, or patrons or to third parties regardless of their status on the property and regardless of whether Customer knew or in the exercise of due diligence could have known or foreseen the likelihood of the particular harm. The foregoing release, hold harmless and indemnity shall not apply to Claims to the extent arising or resulting from the sole negligence or the willful misconduct of LADWP occurring in the course of the performance of LADWP's obligations under this Agreement.

4.4 In no event shall either Party be liable to the other Party for any special, consequential or indirect damages (including by way of illustration, lost revenues and lost profits) arising out of this Agreement or any obligation arising thereunder, whether in action for or arising out of breach of contract, tort, indemnity or otherwise.

4.5 Any written notice under this Agreement shall be sent to the designated contact person for each Party and addressed as follows:

Los Angeles Department of Water and Power
Attention: Ms. Susan R. Rowghani – Director
of Water Engineering & Technical Services Division
111 North Hope Street, Room 1336
Los Angeles, CA 90012

County of Los Angeles Department of Public Works
Attention: Office of Recycled Water
900 South Fremont Avenue
Alhambra, CA 91803

4.6 Either Party may, by written notice to the other Party, change the name or address of the person to receive notices pursuant to this Agreement.

4.7 Any and all liabilities for each Party to the other for third party losses resulting from a breach of this Agreement shall be governed by Section 895 et seq. of the California Government Code.

4.8 Agreement may be executed in counterparts, each of which may be deemed an original, and all of which collectively shall constitute a single instrument. Photocopies, facsimile copies, and PDF copies shall have the same force and effect as a wet ink original signature.

4.9 Each person signing Agreement on behalf of a party hereto warrants and represents that he or she has authority to sign on behalf of said party, and that this Agreement has been validly authorized and constitutes a legally binding and enforceable obligation of said Party.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives.

COUNTY OF LOS ANGELES

By _____
Director of Public Works

APPROVED AS TO FORM:

MARY C. WICKHAM
County Counsel

By: _____
Deputy

IN WITNESS WHEREOF, the Parties thereto have executed this Agreement to be executed by their duly authorized representatives.

DEPARTMENT OF WATER AND POWER
OF THE CITY OF LOS ANGELES BY
BOARD OF WATER AND POWER COMMSSIONERS OF
THE CITY OF LOS ANGELES

By: _____

MARCIE L. EDWARDS
General Manager

Date: _____

And: _____

BARBARA E. MOSCHOS
Board Secretary

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LOS ANGELES REGION

ORDER NO. R4-2011-0032
AMENDING ORDER NO. R4-2007-0009
(File No. 70-117)

WATER RECYCLING REQUIREMENTS
FOR
TITLE 22 RECYCLED WATER

ISSUED TO

CITY OF LOS ANGELES

(Donald C. Tillman Water Reclamation Plant)

The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board), finds:

PURPOSE OF ORDER

1. The City of Los Angeles operates the Donald C. Tillman Water Reclamation Plant under Order No. 86-39 issued on June 23, 1986. Order No. 86-39 was readopted without changes under blanket Order No. 97-072 on May 12, 1997. Order No. 86-39 is a Master Waste Discharge Requirements (WDRs) and Water Recycling Requirements (WRRs). At the request of the City, these WRRs are being separated from the WDRs. This Order now becomes a stand alone Water Recycling Requirements and being reissued to the City pursuant to California Water Code section 13523. This Order prescribes the limits for the recycled water and the City's responsibilities for the production, distribution, monitoring, and application of recycled water. The City is also responsible for processing individual end-users' applications, inspecting point-of-use facilities, and ensuring end-users' compliance with the water recycling requirements contained in this Order. The actual delivery of recycled water to end-users is subject to approval by the California Department of Health Services (DHS), and/or its delegated local health agency. Donald C. Tillman Water Reclamation Plant (WRP) discharges tertiary treated water to the Los Angeles River that is currently regulated under a separate Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0056227, Order No. R4-2006-0091, adopted by this Regional Board on December 14, 2006. The potential percolation of constituents to groundwater as a result of reusing recycled water is regulated under a separate Waste Discharge Requirements, Order No. R4-2007-0008.

DESCRIPTION OF FACILITY AND TREATMENT PROCESS

2. The City operates the Donald C. Tillman Water Reclamation Plant (Tillman WRP) located at 6100 Woodley Avenue, Van Nuys, California, with a dry weather design capacity of 80 million gallons per day (mgd), and is treating an average flow of 58 mgd of municipal wastewater. All or a portion of the tertiary treated and disinfected municipal wastewater may be beneficially reused. Recycled water may be used for dust control at permanent facilities. Permanent facilities would include, but not be limited to, horse ranches, open fields, and fairgrounds.

3. Sewage enters the Tillman WRP via both the Additional Valley Outfall Relief Sewer (AVORS) and the East Valley Interceptor Sewer (EVIS) from the communities of Chatsworth, Canoga Park, West Hills, Woodland Hills, Northridge, Granada Hills, and Van Nuys, and from the City of San Fernando, the Las Virgenes Municipal Water District, and the Triunfo Canyon Sanitation District under contractual agreements.

4. Treatment consists of grit removal, bar screens, primary sedimentation, activated sludge biological treatment, nitrification and denitrification treatment, secondary clarification, coagulation, dual media filtration (Hardinge Filters), chlorination and dechlorination. The sludge from the primary and secondary treatment processes and filter backwash are returned to the interceptor and transported for treatment at the Hyperion Treatment Plant I.

Recycled Water Distribution System

5. The Los Angeles Department of Water and Power (LADPW) constructed the Balboa Pumping Station (BPS) in the southeast corner of the Tillman WRP in order to distribute recycled water. An extension from the Tillman WRP effluent channel was constructed leading to the BPS site where it enters the BPS fore bay. Presently, there are three 1000 horse power vertical lift turbine pumps which are controlled by variable frequency drives, with provisions to install three additional 1000 horse power pumps to facilitate future expansion. There are two distribution pipelines that extend under the dike at the southerly boundary of the Tillman WRP from BPS. One of these pipelines is 36-inches in diameter and will serve irrigation customers in the Sepulveda Basin. The second pipeline is 54-inches in diameter and extends approximately ten miles to the east San Fernando Valley to serve customers such as the Valley Generating Station and Hansen Dam Recreation Area. BPS receives Tillman WRP effluent prior to dechlorination, so there are provisions to dechlorinate in the two distribution pipelines independently, to adjust the chlorine residual in each depending on operating conditions. The BPS is fully automated using data feeds for channel flow and level, total dissolved solids (TDS), PH, chlorine residual, and customer demand (pressure). In the event that flow or water quality parameters are outside operating limits, an automated shut-down will occur. There are also provisions for remote monitoring and operation by the LADWP, as well as emergency shutdown by the Tillman WRP personnel if necessary.

APPLICABLE PLANS, POLICIES AND REGULATIONS

6. ***Title 22 of the California Code of Regulations*** – The DHS established criteria for using recycled water. These criteria are codified in Title 22, California Code of Regulations, Chapter 3 Water Recycling Criteria, including such requirements as Sources of Recycled Water, Uses of Recycled Water, and Use of Area Requirements, etc. The DHS adopted revised Water Recycling Criteria that became effective on March 20, 2001. Applicable criteria are prescribed in this Order. In a letter dated August 10, 2010, California Department of Public Health finds that recycled water for dust control at permanent facilities is an appropriate and safe use, and recommends that the Regional Board approve such use.

7. The State Board adopted Resolution No. 77-1, Policy with Respect to Water Reclamation in California, which includes principles that encourage and recommend funding for water recycling and its use in water-short areas of the State. On September 26, 1988, the

Regional Board also adopted Resolution No. 88-012, Supporting Beneficial Use of Available Reclaimed Water in Lieu of Potable Water for the Same Purpose, which encourages the beneficial use of recycled wastewater and supports water recycling projects.

8. A February 24, 2004 State Board memorandum from Celeste Cantú to the Regional Board Executive Officers entitled "Incidental Runoff of Recycled Water", provided recommendations regarding regulatory management of incidental runoff. The memorandum stated: To further the goal of maximizing the use of recycled water, the water quality laws should be interpreted in a manner that is consistent with the intent of the Legislature to promote recycled water use. Consequently, incidental runoff from recycled water projects should be handled as follows:

   A. Where reclamation requirements prohibit the discharge of waste to waters of the State and discharges are not expected to occur, occasional runoff should not trigger the need for either an individual NPDES permit or enforcement action.

   B. If discharges from reclamation project area occur routinely, such discharges can be regulated under municipal storm water NPDES permit in most cases.

   C. In limited cases, where necessary to address a water quality concern, discharges of recycled water to surface waters may be regulated under an individual NPDES permit. An NPDES permit, however, should not be issued unless necessary to achieve water quality objectives.

   The memorandum also describes the framework for regulating incidental runoff from irrigation systems and from storage ponds without issuing such an NPDES permit.

9. Section 13523 of the California Water Code provides that a Regional Board, after consulting with and receiving recommendations from DHS or its delegated local health agency, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe water recycling requirements for water that is used or proposed to be used as recycled water. Section 13523 further provides **at a minimum**, that the recycling requirements shall include, or be in conformance with, the statewide water recycling criteria established by DHS pursuant to Water Code section 13521.

10. Pursuant to California Water Code section 13523, the Regional Board has consulted with the DHS regarding the proposed recycling project and has incorporated their recommendations in this Order.

11. The requirements contained in this Order are in conformance with the goals and objectives of the Basin Plan and implement the requirements of the California Water Code and Title 22 California Code of Regulations, Chapter 3 Water Recycling Criteria.

12. Section 13523.5 on water reclamation requirements in the Water Code states that a Regional Board may not deny issuance of water reclamation requirements to a project that violates only a salinity standard in a basin plan. In 1985, soon after this provision was added to the Water Code, the State Board Office of Chief Counsel issued a legal opinion

concluding that this provision does not apply to waste discharge requirements. Hence, waste discharge requirements for projects that recycle water may contain effluent and other limitations on discharges of salts as necessary to meet water quality objectives, comply with the Antidegradation Policy, or otherwise protect beneficial uses.

CEQA AND NOTIFICATION

13. The City prepared a "Final Supplemental Environmental Impact Statement/Environmental Impact Report (EIS/EIR) City of Los Angeles Wastewater Facilities Plan Update" that was reported on October 1990. No significant adverse impacts on ground water quality were identified in the EIS/EIR as a result of proposed irrigation projects.

14. This Title 22 recycled water project for purposes of the California Environmental Quality Act, is the use of tertiary-treated and disinfected effluent, produced at the Tillman WRP, as recycled water in conformance with DHS regulations and the Regional Board's Basin Plan. The Regional Board is a CEQA responsible agency for the project and has reviewed the EIS/EIR and concludes, based on substantial evidence set forth in the EIS/EIR, that there will be no adverse impact on the environment that cannot be mitigated.

15. Pursuant to the California Water Code section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to: State Water Resources Control Board, P.O. Box 100, Sacramento, CA 95812, within 30 days of adoption.

The Regional Board has notified the City of Los Angeles and interested agencies and persons of its intent to issue Water Recycling Requirements Order No. R4-2007-0009 and a separate Waste Discharge Requirements Order No. R4-2007-0008 for the production, distribution and use of recycled water, and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to these Water Recycling and separate Waste Discharge Requirements.

IT IS HEREBY ORDERED that the City of Los Angeles shall comply with the following:

I. RECYCLED WATER LIMITATIONS

1. Recycled water used for irrigation, industrial, and other uses shall be limited to tertiary-treated and disinfected effluent only, as proposed. The tertiary-treated and disinfected effluent used as recycled water (hereafter disinfected tertiary recycled water or recycled water) is wastewater that has been filtered and subsequently disinfected that meets the following criteria:

    A. The filtered wastewater has been disinfected by either Section I.1.A.a or Section I.1.A.b:

        a. A chlorine disinfection process that provides a concentration-time (CT) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather

design flow. The CT is the product of total chlorine residual and modal contact time measured at the same period. The modal contact time is the amount of time that elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance of the chlorination chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber. The peak dry weather design flow is the arithmetic mean of the maximum peak flow rates sustained over some period of time (for example three hours) during the maximum 24-hour dry weather period. Dry weather period is defined as periods of little or no rainfall.

For purposes of calculating and demonstrating compliance with the CT requirement, within 30 days after the initial delivery of recycled water, the City shall complete tracer studies under four different flow rates (the maximum, the minimum, and two points in between) to determine the respective modal contact time at the chlorine contact basin. The studies shall follow the protocol outlined in *Tracer Studies in Water Treatment Facilities: A Protocol and Case Studies* published by the American Water Works Association Research Foundation. A curve of flow rate vs. modal contact time, based on the study results, shall be used for estimating the modal contact time at a given flow rate, which is essential for the CT calculation. A final report on the tracer studies shall be submitted to the DHS and the Regional Board within 30 days after the completion of the studies.

In the interim period before the completion of tracer studies, the theoretical retention time based on the volume of the chlorine contact basin and the design flow rate shall be used as the modal contact time in the calculation of CT.

b. A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

F-specific bacteriophage MS-2 means a strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC 15597B1) and is grown on lawns of E. coli (ATCC 15597).

B. The median concentration of total coliform bacteria measured in the disinfected wastewater does not exceed a most probable number (MPN) or a colony forming unit (CFU) of 2.2 per 100 milliliters based on the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN/CFU of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN/CFU of 240 total coliform bacteria per 100 milliliters.

C. A filtered wastewater shall be an oxidized wastewater that has been coagulated and passed through natural undisturbed soil or a bed of filter media under the following conditions:

a. At a rate that does not exceed 5 gallons per minute per square foot of surface area in mono, dual or mixed media gravity, upflow or pressure filtration systems, or does not exceed 2 gallons per minute per square foot of surface area in a traveling bridge automatic backwash filter; and,

b. The turbidity of the filtered wastewater does not exceed any of the following:

i. An average of 2 NTU within a 24-hour period;

ii. 5 NTU more than 5 percent of the time within a 24-hour period; and,

iii. 10 NTU at any time.

"NTU" (Nephelometric Turbidity Unit) is a turbidity measurement determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light as measured by Method 2130 B. in *Standard Methods for the Examination of Water and Wastewater, 20th E*dition; Eaton, A. D., Clesceri, L. S., and Greenberg, A. E., Eds; American Public Health Association, Washington, D.C., 1998; p2-8.

c. Continuous chemical addition upstream of the filters is not required if

i. Final effluent turbidity does not exceed 2 NTU;

ii. The turbidity of the influent to the filters is continuously measured;

ii. The influent turbidity to the filters does not exceed 5 NTU for more than 15 minutes in any 24-hour period and never exceeds 10 NTU; and,

iv. There is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed 5 NTU for more than 15 minutes.

D. A coagulated wastewater shall be an oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated upstream from a filter by the addition of suitable floc-forming chemicals.

E. An oxidized wastewater shall be wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

II. SPECIFICATIONS FOR USE OF RECYCLED WATER

The City shall oversee the end-users such that the following requirements are complied with.

1. The disinfected tertiary recycled water may be used for those applications specified in Title 22, Division 4, Chapter 3 Water recycling Criteria of the California Code of Regulations. Should the water not meet the definition of tertiary recycled water, but instead meet the definition of disinfected secondary-23 recycled water, it may only be used for those applications specified for use of disinfected secondary-23 recycled water in Title 22, Division 4, Chapter 3 Water Recycling Criteria of the California Code of Regulations.

    A. In a letter dated August 10, 2010, California Department of Public Health (formerly DHS) finds that recycled water for dust control at permanent facilities is an appropriate and safe use for this application. Permanent facilities include but are not limited to horse ranches, open fields, and fairgrounds.

2. Indirect potable uses and groundwater recharge are not covered by this Order.

3. Recycled water shall not be used other than those specified in section II.1 unless a revision to engineering report has been submitted to and approved by the DHS for such other uses and/or requirements for these uses have been prescribed by this Regional Board, in accordance with Section 13523 of the California Water Code. Any additionally approved recycled water applications to this permit can be approved by the Executive Officer of this Regional Board.

III. USE AREA REQUIREMENTS

Use area is an area of recycled water use with defined boundaries, which may contain one or more facilities where recycled water is used.

The City shall be responsible to ensure that all users of recycled water comply with the following:

1. No irrigation areas with disinfected tertiary recycled water shall be located within 50 feet of any domestic water supply well unless all of the following conditions have been met:

    A. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface;

    B. The well contains an annular seal that extends from the surface into the aquitard;

    C. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities;

D. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well; and,

E. The owner of the well approves of the elimination of the buffer zone requirement.

2. There shall be no storage or impoundment of disinfected tertiary recycled water within 100 feet of any domestic water supply well.

3. No irrigation shall take place within 50 feet of any open reservoir, subsurface storage reservoir, or stream currently used as a source of domestic water.

4. Use of recycled water shall comply with the following:

A. Recycled water shall be applied at such a rate and volume as not to exceed vegetative demand and soil moisture conditions. Special precautions must be taken to: prevent clogging of spray nozzles, prevent over-watering, and minimize the production of run-off. Pipelines shall be maintained so as to prevent leakage;

B. Any incidental runoff from recycled water projects should be handled as follows and shall not be considered a violation of this Order:

a. Where these WRRs prohibit the discharge of recycled water to waters of the State or the United Sates and discharges are not expected to occur, occasional runoff should not trigger the need for either an individual NPDES permit or enforcement action.

b. If discharges from recycling project area occur routinely, such discharges can be regulated under municipal storm water NPDES permit in most cases.

c. In limited cases, where necessary to address a water quality concern, discharges of recycled water to surface waters may be regulated under an individual NPDES permit. An NPDES permit, however, should not be issued unless necessary to achieve water quality objectives.

C. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities, and shall not contact any drinking water fountain; and,

D. Recycled water shall not be used for irrigation during periods of rainfall and/or runoff.

E. Recycled water used for dust control at permanent facilities shall employ the Best Management Practices as described in Attachment 1. The vehicles to be used for transporting recycled water for dust control shall be equipped with an air gap filling port for receiving potable or recycled water, or shall be equipped with two separate hoses, one for potable and one for recycled water, which

shall be of different sizes to prevent cross connection of sources. In addition the spray heads and nozzles shall be configured and maintained to minimize runoff, ponding, and drift.

5. All recycled water use areas that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK". Each sign shall display an international symbol similar to that shown in Figure 1. An alternative signage and wording may be used provided they are approved by the DHS.

6. No physical connection shall be made or allowed to exist between any recycled water piping and any piping conveying potable water, except as allowed under Section 7604 of Title 17, California Code of Regulations.

7. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs (a faucet or similar device to which a common garden hose can be readily attached). Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access.

8. Recycled water use shall not result in earth movement in geologically unstable areas.

IV. REQUIREMENTS FOR DUAL-PLUMBED SYSTEM

1. "Dual plumbed" means a system that utilizes separated piping systems for recycled water and potable water within a facility and where the recycled water is used for either of the following purposes:

   A. To serve plumbing outlets (excluding fire suppression systems) within a building, or

   B. Outdoor landscape irrigation at individual residences.

2. The public water supply shall not be used as a backup or supplemental source of water for a dual-plumbed recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of Section 7602 (a) and 7603 (a) of Title 17, California Code of Regulations, and that such connection has been approved by the DHS and/or its delegated local agency.

3. The City shall not deliver recycled water to a facility using a dual-plumbed system unless the report required pursuant to Section 13522.5 of the California Water Code, and which meets the requirements set forth in sections IV.4 and/or IV.5 of this Order, has been submitted, and approved by, the DHS and/or its delegated local agency. The Regional Board shall be furnished with a copy of the DHS approval together with the aforementioned report within 30 days following the approval.

4. The report pursuant to Section 13522.5 of the California Water Code shall contain the following information for dual-plumbed systems, in addition to the information required by Section 60323 of Title 22, California Code of Regulations (Engineering Report):

   A. A detailed description of the intended use site identifying the following:

      a. The number, location, and type of facilities within the use area proposing to use dual-plumbed systems;

      b. The average number of persons estimated to be served by each facility on a daily basis;

      c. The specific boundaries of the proposed use site including a map showing the location of each facility to be served;

      d. The person or persons responsible for operation of the dual-plumbed system at each facility; and,

      e. The specific use to be made of the recycled water at each facility.

   B. Plans and specifications describing the following:

      a. Proposed piping system to be used;

      b. Pipe locations of both the recycled and potable systems;

      c. Type and location of the outlets and plumbing fixtures that will be accessible to the public; and

      d. The methods and devices to be used to prevent backflow of recycled water into the public water system.

   C. The methods to be used by the City to assure that the installation and operation of the dual-plumbed system will not result in cross connections between the recycled water piping system and the potable water piping system. These shall include a description of pressure, dye or other test methods to be used to test the system every four years.

5. Prior to the initial operation of the dual-plumbed recycled water system and annually thereafter, the dual-plumbed system within each facility and use site shall be inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in section IV.4.C of this Order. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection and testing for the prior year shall be submitted to the DHS within 30 days

following completion of the inspection or testing.

6. The City shall notify the DHS of any incidence of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of discovery of the incident.

7. Any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with Section 7605 of Title 17, California Code of Regulations.

V. GENERAL REQUIREMENTS

1. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.

2. Bypass, discharge, or delivery to the use area of inadequately treated recycled water, at any time, is prohibited.

3. The recycling facility shall be adequately protected from inundation and damage by storm flows and run-off.

4. Adequate freeboard and/or protection shall be maintained in the recycled water storage tanks and process tanks to ensure that direct rainfall will not cause overtopping.

5. The wastewater treatment and use of recycled water shall not result in problems caused by breeding of mosquitoes, gnats, midges, or other pests.

6. Odors of sewage origin shall not be perceivable any time outside the boundary of the treatment facility.

7. The City shall, at all times, properly operate and maintain all treatment facilities and control systems (and related appurtenances) which are installed or used by the City to achieve compliance with the conditions of this Order. Proper operation and maintenance includes: effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

8. A copy of these requirements shall be maintained at the water reclamation facility so as to be available at all times to operating personnel.

9. The City shall furnish each user of recycled water a copy of these requirements and ensure that the requirements are maintained at the user's facility so as to be available at all times to operating personnel.

10. The current Title 22 Engineering Report for the San Fernando Valley Water Recycling Project was issued on June 1992, over fourteen years ago. In accordance with section 13522.5 of the California Water Code, and Title 22, Division 4, Chapter 3, Article 7, Section 60323 of the California Code of Regulations, the City shall file an

updated engineering report, prepared by a properly qualified engineer registered in California, for any material change or proposed change in character, location or volume of the recycled water or its uses, and send copy to the Regional Board and to the DHS for review and approval within one year from the adoption date of January 11, 2007. This updated engineering report shall describe the current treatment plant, their impacts on the recycled water operation, and the operation and maintenance management plan, including a preventive (fail-safe) procedure and contingency plan for controlling accidental discharge and/or delivery to users of inadequately treated recycled water.

VI. PROVISIONS

1. The City shall continue to submit plans for proposed and as-built drawings for recycled water projects to and obtain approval from DHS or its delegated local health agency for each recycled water project. The American Water Works Association Guidelines for the Distribution of Non-Potable Water shall be followed, including installation of purple pipe, adequate signs, etc. As-built drawings shall show the final locations of the potable water, sewer, and recycled water pipelines; and indicate adequate separation between the recycled water and potable domestic water lines, which shall also be marked clearly or labeled using separate colors for identification. In addition, a copy of each application to DHS for a recycled water project shall be delivered to the RWQCB for inclusion in the administrative file with the following information:

   A. A description of each use area including, but not limited to, a description of what will be irrigated (e.g., landscape, specific food crop, etc.); method of irrigation (e.g., spray, flood, or drip); the location of domestic water supply facilities adjacent to the use areas; site containment measures; the party responsible for the distribution and use of the recycled water at the site; identification of other governmental entities which may have regulatory jurisdiction over the reuse site(s).

   B. A map showing specific areas of use, areas of public access, surrounding land uses, the location and construction details of wells in or near the use areas, location and type of signage, the degree of potential access by employee or the public, and any exclusionary measures (e.g. fencing).

      The City shall submit to the Regional Board a copy of the approved Recycled Water Project and the DHS approval within 30 days of approval.

2. For any extension or expansion of the recycled water system or use areas not covered by the Recycled Water Plan, the City shall submit a report detailing the extension or expansion plan for approval by the DHS or its delegated local health agency. The plan shall include, but not limited to, the information specified in sections VI.1.A. and B. above. Following construction, as-built drawings shall be submitted to the DHS or its delegated local health agency for approval prior to delivery of recycled water.

The City shall submit to the Regional Board a copy of the approved expansion plan and the DHS approval within 30 days of approval.

3. If the recycled water system lateral pipelines are located on an easement contiguous to a homeowners private property and where there is a reasonable probability that an illegal or accidental connection to the recycled water line could be made, the City shall provide a buffer zone or other necessary measures between the recycled water lines and the easement to prevent any illegal or accidental connection to the recycled water lines. The City shall notify such homeowners about the recycled water lateral and restrictions on usage of recycled water.

4. The City shall inspect the recycled water use areas on a periodic basis. The City shall propose an inspection schedule, based the type of use site, for approval by DHS within 90 days of the effective date of this permit. A report of findings of the inspection shall be submitted to the DHS, County Health Department, and the Regional Board on a quarterly basis.

5. The City shall submit to the Regional Board, under penalty of perjury, technical self-monitoring reports according to the specifications contained in the Monitoring and Reporting Program as directed by the Executive Officer.

6. The City shall notify this Regional Board and the DHS by telephone or electronic means within 24 hours of knowledge of any violations of recycled water use conditions or any adverse conditions as a result of the use of recycled water from this facility; written confirmation shall follow within 5 working days from date of notification.

7. The City shall notify this Regional Board and the DHS, immediately by telephone, of any confirmed coliform counts that could cause a violation of the requirements. This information shall be confirmed in the next monitoring report. For any actual coliform limit violation that occurred, the report shall also include the cause(s) of the high coliform counts, the corrective measures undertaken (including dates thereof), and the preventive measures undertaken to prevent a recurrence.

8. The direct use of Title 22 tertiary treated and disinfected recycled water for impoundments and irrigation could affect the public health, safety, or welfare; requirements for such uses are therefore necessary in accordance with Section 13523 of the Water Code.

9. Based on February 24, 2004 memorandum, recycled water ponds should follow the following:

   A. The recycled water pond is designed not to spill during wet months. Under this circumstance, spills that occur under extreme weather conditions or emergencies should not be considered for enforcement.

   B. Recycled water ponds can be drained and refilled with potable water or flushed with potable water prior to the onset of the wet season. Flushing will not displace all of the recycled water but the water quality threat is minimal.

C. Recycled water ponds designed to spill recycled water during the wet season can be regulated under Phase 1 municipal storm water permits or under a general storm water permit. These permits require reduction of pollutants to the maximum extent practicable. The permits also incorporate receiving water limitations requiring the implementation of an iterative process for addressing any exceeding of water quality objectives.

10. This Order does not exempt the City from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize the recycling and use facilities; and they leave unaffected any further constraint on the use of recycled water at certain site(s) that may be contained in other statutes or required by other agencies.

11. This Order does not alleviate the responsibility of the City to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency. Expansion of the recycled water distribution facility shall be contingent upon issuance of all necessary requirements and permits, including a conditional use permit.

12. After notice and opportunity for a hearing, this Order may be modified, revoked and reissued, or terminated for cause, that include, but is not limited to: failure to comply with any condition in this Order; endangerment of human health or environment resulting from the permitted activities in this Order; obtaining this Order by misrepresentation or failure to disclose all relevant facts; acquisition of new information which could have justified the application of different conditions if known at the time of Order adoption.

    The filing of a request by the City for modification, revocation and reissuance, or termination of the Order; or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

13. The City shall furnish, within a reasonable time, any information the Regional Board or the DHS may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The City shall also furnish the Regional Board, upon request, with copies of records required to be kept under this Order for at least three years.

14. In an enforcement action, it shall not be a defense for the City that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the City shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

15. This Order includes the Water Recycling Requirements (WRRs) and the attached Monitoring and Reporting Program (MRP, CI No. 9199). If there is any conflict between provisions stated in the MRP and these WRRs, those provisions stated

herein before prevail.

VII. EFFECTIVE DATE OF THE ORDER

This Order takes effect upon its adoption.

I, Samuel Unger, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on February 3, 2011.

Samuel Unger

Samuel Unger, P.E.
Executive Officer

/DTSAI/

Attachment 1

LADWP Water Recycling

Recycled Water User Guidelines

DUST CONTROL

ALLOWED USE

The California Code of Regulations, Title 22 Section 60307(b)(6) allows the use of recycled water for dust control on streets and roads. In addition, this Dust Control Guideline has been approved by the California Department of Public Health for dust control within facilities (pending DPH). Recycled water is NOT allowed for drinking, washing, or animal water supply.

REQUIREMENTS FOR USE

- Vehicles used for collecting and distributing recycled water for dust control shall:
  - Have an adequate tank and plumbing system to ensure that leaks and ruptures will not occur due to normal use.
  - Either be equipped with two risers, one for potable water and one for recycled water, or each tank used shall be equipped with approved air-gap separation between the filler tube and the tank.
  - Have color-coded risers, hoses, and fittings: blue for potable water and purple for recycled water.
  - Be equipped with uniquely sized fittings to prevent accidental connection between the potable and recycled systems.
  - Be equipped with spray heads/nozzles configured to minimize runoff, ponding, or spray drift.
  - Be equipped with control valves configured such that recycled water can be applied in a controlled fashion on the site and completely retained during transit.
  - Be clearly labeled as specified in the "Signage Requirements" section on Page 2.
- Prior to use, _____ will inspect the Users' vehicles to ensure compliance with the requirements listed above.
- Each vehicle tank used to store and/or transport recycled water must be flushed and disinfected prior to storage and/or transport of potable water or recycled water of better quality.
- User must maintain a log recording details of all recycled water deliveries (date, location, volume, and end use).
- Any storage facility containing recycled water for reuse applications shall be managed in a manner to control odor.
- Sites shall be designed and operated using Best Management Practices (BMPs) as stated below, or as revised by LADWP, to prevent recycled water spray, mist, or surface flow from either leaving the site or reaching:
  1. Any storm drain or surface water with year-round flow located adjacent to the Site;
  2. Areas with public access (e.g. dwellings, designated outdoor eating areas, or food handling facilities);
  3. Drinking fountains, unless specifically protected with a shield device.

BEST MANAGEMENT PRACTICES

- For dust control adjacent to surface waters, install runoff barriers, such as vegetative strips, collection system, or 100-foot buffers.
- Maintain distance buffers if applying recycled water near sensitive land uses.
- Do not apply recycled water for dust control during strong winds.
- The application method must not cause ponding of water. For example: avoid excessive application volumes, use after heavy rains, or application to excessively uneven surfaces.
- Recycled water must not run off the site where it is applied. Conduct visual inspections to determine the necessary delivery rates and volumes. If runoff cannot be restricted by application method (for example, if the ground surface is strongly sloped or the soil has low water permeability), runoff needs to be collected via a drainage system and reused.
- If hand watering is used, keep the hose low to ground and point it in the direction of the wind to prevent spray drift.
- Signage should be displayed at site of storage, during watering, and while the area is still wet (see "Signage Requirements" on Page 2).
- When watering is completed, drain hose and return hose to secure position. Ensure that there is no risk that recycled water may be used for drinking purposes or animal water supply.

LADWP Water Recycling

Recycled Water User Guidelines

DUST CONTROL

HEALTH AND SAFETY GUIDELINES

- All workers that are likely to be present during dust control activities are required to have training in the proper use of recycled water. Supervisory personnel and Site supervisors should be held accountable to ensure that employees are using recycled water properly.
- It is the responsibility of the User to train all operations personnel so they are familiar with the use of recycled water. Training for operations personnel should include, but not be limited to, awareness of the following:
  1. Working with recycled water IS SAFE if common sense is used and if appropriate regulations followed.
  2. Recycled water, although highly treated, is non-potable.
  3. Conditions such as ponding and runoff are not allowed.
  4. Good personal hygiene must be followed (e.g. wash hands after working with recycled water, do not consume food or drink while working with recycled water, cover wounds to prevent contact with recycled water).
  5. Cross-connections between the recycled water system and the potable water system must not be allowed to exist.

DID YOU KNOW

Tertiary treated recycled water is considered safe for full-body contact

California Code of Regulations Title 22, 60305(a) & 60301.220

Report any accidental spills of recycled water or personal hygiene issues that have received medical attention to LADWP for action and record keeping. LADWP will initiate normal incident management procedures.

SIGNAGE REQUIREMENTS

Vehicle-Mounted Recycled Water Storage Tanks

While using vehicle-mounted recycled water for dust control, the User must install, maintain, and keep in place three magnetic signs (on both sides and the rear of each vehicle, at the outlet) indicating that recycled water is in use. The signs must contain the words "RECYCLED WATER – DO NOT DRINK" in 2-inch high letters on a purple background and the "Do Not Drink" symbol, as shown to the right. All labels and signs must be placed where they can easily be seen by the personnel using the vehicle.

Other Equipment and Devices

All stationary pipe, materials, and equipment used to carry recycled water onsite (such as pipes, air vacuum relief valves, pressure reducing valves, pumps, pump control valves, etc.) must be properly identified. If the User installs any stationary recycled water equipment, information on required markings and tagging is found in the 2005 Los Angeles County Reclaimed Water Advisory Committee Recycled Water User Manual (RW User Manual), Page 23.

USER AGREEMENTS

All potential recycled water users in the City of Los Angeles must meet LADWP's requirements and must enter into a written agreement with LADWP. LADWP reserves the right to take any action necessary with respect to the operation of the User's onsite recycled water operations in order to safeguard public health and to meet applicable regulations and permits. For information on User Agreements, refer to the RW User Manual, Pages 8 and 33.

The City of Los Angeles has safely used recycled water since 1979 for irrigation and industrial purposes. For more information about recycled water, treatment processes, and availability in the City of Los Angeles, please contact the LADWP Water Recycling Group at (213) 367-3637 or (213) 367-4141 or visit www.ladwp.com

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. R4-2011-0035
AMENDING ORDER NO. R4-2007-0007
(File No. 68-085)

WATER RECYCLING REQUIREMENTS
FOR
TITLE 22 RECYCLED WATER

ISSUED TO

CITY OF LOS ANGELES

(Los Angeles-Glendale Water Reclamation Plant)

The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board), finds:

PURPOSE OF ORDER

1. The City of Los Angeles operates the Los Angeles-Glendale Water Reclamation under Order No. 86-16 issued on March 24, 1986. Order No. 86-16 was readopted without changes under blanket Order No. 97-072 on May 12, 1997. Order No. 86-16 is a Master Waste Discharge Requirements (WDRs) and Water Recycling Requirements (WRRs). At the request of the City, these WRRs are being separated from the WDRs. This Order now becomes a stand alone Water Recycling Requirements and is being reissued to the City pursuant to California Water Code section 13523. This Order prescribes the limits for the recycled water and the City's responsibilities for the production, distribution, monitoring, and application of recycled water. The City is also responsible for processing individual end-users' applications, inspecting point-of-use facilities, and ensuring end-users' compliance with the water recycling requirements contained in this Order. The actual delivery of recycled water to end-users is subject to approval by the California Department of Health Services (DHS), and/or its delegated local health agency. Los Angeles-Glendale Water Reclamation Plant (WRP) discharges tertiary treated water to the Los Angeles River that is currently regulated under a separate Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0053953, Order No. R4-2006-0092, adopted by this Regional Board on December 14, 2006. The potential percolation of constituents to groundwater as a result of reusing recycled water is regulated under a separate Waste Discharge Requirements, Order No. R4-2007-0006.

DESCRIPTION OF FACILITY AND TREATMENT PROCESS

2. The City of Los Angeles operates the Los Angeles-Glendale WRP located at 4600 Colorado Boulevard, Los Angeles, California, and treats wastewater generated from the cities of Glendale, Burbank, Los Angeles, La Canada~Flintridge, and from the Los Angeles Zoo. The plant has a dry weather design capacity of 20.0 million gallons per day (mgd). All or a portion of the treated municipal wastewater may be reused for irrigation in

Griffith Park, general park and golf course irrigation, fire fighting uses, impoundments, and dust control at permanent facilities. Permanent facilities would include, but not be limited to, horse ranches, open fields, and fairgrounds. The City of Glendale's irrigation and industrial projects are also served by Los Angeles-Glendale WRP.

3. Treatment consists of bar screens, primary sedimentation, activated sludge biological treatment, secondary sedimentation, filtration, chlorination, and dechlorination. The sludge from the primary and secondary treatment processes, and filter backwash are returned to the North Outfall Interceptor sewer line for treatment at the City of Los Angeles Hyperion Treatment Plant.

4. *Modifications to the Treatment Plant:* Los Angeles-Glendale WRP made changes to its treatment system to conduct a pilot study on nitrification and de-nitrification (NDN) process that would limit the nitrogen compounds in its effluent, as required by nitrogen TMDL, Resolution No. R4-2003-009, adopted by Regional Board on July 10, 2003. Los Angeles-Glendale WRP is making changes to its Wastewater Treatment Plant to achieve compliance with the nitrogen compounds by September 2007. Currently, Los Angeles-Glendale WRP is in compliance with the total nitrogen limitation prescribed in the existing WRRs.

Recycled Water Distribution System

5. The Los Angeles-Glendale Water Reclamation Plant (LAG) provides treated water to the Cities of Los Angeles and Glendale for distribution to reclaimed water customers. Los Angeles Department of Water and Power (LADPW) major customers include Griffith Park (parkland and two golf courses), Forest Lawn Memorial Park, Mount Sinai Memorial Park, Lakeside Golf Course and MCA/Universal Studios. Water is used primarily for irrigation. Glendale's major customers of reclaimed water include Glendale-Greyson Power Plant, Scholl Canyon Park, Scholl Canyon Landfill, Scholl Canyon Golf Course and Glendale Sports Complex. Water is used primarily for irrigation and cooling water. Recycled water may also be used for dust control at permanent facilities. Plans are currently underway to expand reclaimed water service south and east of LAG.

   Treated water is generated by LAG continually, but not always at rates demanded by Reclaimed Water customers. As water is generated, it is temporarily stored in a common tank used by both LADWP and Glendale. Water distributed by the system roughly varies from 2 mgd in the winter months to 5 mgd in the summer months (both flows on monthly averages). Distribution of reclaimed water is higher in the late evening to early morning hours compared to daytime use.

   The LADPW and Glendale operate five (5) product water pumps at LAG to fill a recycled water storage tank (2 million gallon capacity) at the beginning of the recycled water distribution system. Each pump is 600 horse power, 4500 gpm and VFD driven. There are provisions to install three additional pumps to facilitate future expansion. Sodium bisulfite is metered by LADWP into the water pumped to the storage tank to partially de-chlorinate the treated water from LAG.

Water from the LADWP storage tank is distributed by gravity flow to LADWP customers and to the City of Glendale. Glendale uses a network of pump stations to pump water to five smaller storage tanks (0.13 to 0.30 million gallon capacity). Water is distributed by gravity to end users from these tanks.

LADWP controls the product water pumps remotely and would normally shut down the pumps after verbal confirmation that product water exceeded permit limits. LAG has the capability of shutting down the pumps locally if necessary.

APPLICABLE PLANS, POLICIES AND REGULATIONS

6. ***Title 22 of the California Code of Regulations*** – The DHS established criteria for using recycled water. These criteria are codified in Title 22, California Code of Regulations, Chapter 3 Water Recycling Criteria, including such requirements as Sources of Recycled Water, Uses of Recycled Water, and Use of Area Requirements, etc. The DHS adopted revised Water Recycling Criteria that became effective on March 20, 2001. Applicable criteria are prescribed in this Order. In a letter dated August 10, 2010, California Department of Public Health finds that recycled water for dust control at permanent facilities is an appropriate and safe use, and recommends that the Regional Board approve such use.

7. The State Board adopted Resolution No. 77-1, Policy with Respect to Water Reclamation in California, which includes principles that encourage and recommend funding for water recycling and its use in water-short areas of the State. On September 26, 1988, the Regional Board also adopted Resolution No. 88-012, Supporting Beneficial Use of Available Reclaimed Water in Lieu of Potable Water for the Same Purpose, which encourages the beneficial use of recycled wastewater and supports water recycling projects.

8. A February 24, 2004 State Board memorandum from Celeste Cantú to the Regional Board Executive Officers entitled "Incidental Runoff of Recycled Water", provided recommendations regarding regulatory management of incidental runoff. The memorandum stated: To further the goal of maximizing the use of recycled water, the water quality laws should be interpreted in a manner that is consistent with the intent of the Legislature to promote recycled water use. Consequently, incidental runoff from recycled water projects should be handled as follows:

   A. Where reclamation requirements prohibit the discharge of waste to waters of the State and discharges are not expected to occur, occasional runoff should not trigger the need for either an individual NPDES permit or enforcement action.

   B. If discharges from reclamation project area occur routinely, such discharges can be regulated under municipal storm water NPDES permit in most cases.

   C. In limited cases, where necessary to address a water quality concern, discharges of recycled water to surface waters may be regulated under an individual NPDES permit. A NPDES permit, however, should not be issued unless necessary to achieve water quality objectives.

The memorandum also describes the framework for regulating incidental runoff from irrigation systems and from storage ponds without issuing such a NPDES permit.

9. Section 13523 of the California Water Code provides that a Regional Board, after consulting with and receiving recommendations from DHS or its delegated local health agency, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe water recycling requirements for water that is used or proposed to be used as recycled water. Section 13523 further provides **at a minimum**, that the recycling requirements shall include, or be in conformance with, the statewide water recycling criteria established by DHS pursuant to Water Code section 13521.

10. Pursuant to California Water Code section 13523, the Regional Board has consulted with the DHS regarding the proposed recycling project and has incorporated their recommendations in this Order.

11. The requirements contained in this Order are in conformance with the goals and objectives of the Basin Plan and implement the requirements of the California Water Code and Title 22 California Code of Regulations, Chapter 3 Water Recycling Criteria.

12. Section 13523.5 on water reclamation requirements in the Water Code states that a Regional Board may not deny issuance of water reclamation requirements to a project that violates only a salinity standard in a Basin Plan. In 1985, soon after this provision was added to the Water Code, the State Board Office of Chief Counsel issued a legal opinion concluding that this provision does not apply to waste discharge requirements. Hence, waste discharge requirements for projects that recycle water may contain effluent and other limitations on discharges of salts as necessary to meet water quality objectives, comply with the Antidegradation Policy, or otherwise protect beneficial uses.

CEQA AND NOTIFICATION

13. The City of Los Angeles prepared a "Final Supplemental Environmental Impact Statement/Environmental Impact Report (EIS/EIR) City of Los Angeles Wastewater Facilities Plan Update" that was reported on October 1990. No significant adverse impacts on ground water quality were identified in the EIS/EIR as a result of proposed irrigation projects.

14. This Title 22 recycled water project for purposes of the California Environmental Quality Act is the use of disinfected tertiary-treated effluent, produced at the Los Angeles-Glendale WRP, as recycled water in conformance with DHS regulations and the Regional Board's Basin Plan. The Regional Board is a CEQA responsible agency for the project and has reviewed the EIS/EIR and concludes that based on substantial evidence set forth in the EIS/EIR, that there will be no adverse impact on the environment that cannot be mitigated.

15. Pursuant to the California Water Code section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to: State Water Resources Control Board, P.O. Box 100, Sacramento, CA 95812, within 30 days of adoption.

The Regional Board has notified the City of Los Angeles and interested agencies and persons of its intent to issue Water Recycling Requirements Order No. R4-2007-0007 and a separate Waste Discharge Requirements Order No. R4-2007-0006 for the production, distribution and use of recycled water, and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to these Water Recycling and separate Waste Discharge Requirements.

IT IS HEREBY ORDERED that the City of Los Angeles shall comply with the following:

I. RECYCLED WATER LIMITATIONS

1. Recycled water used for irrigation shall be limited to tertiary-treated and disinfected effluent only as proposed for irrigation, industrial and other uses. The disinfected tertiary-treated effluent used as recycled water (hereafter disinfected tertiary recycled water or recycled water) is wastewater that has been filtered and subsequently disinfected that meets the following criteria:

   A. The filtered wastewater has been disinfected by either Section I.1.A.a or Section I.1.A.b.:

      a. A chlorine disinfection process that provides a concentration-time (CT) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow. The CT is the product of total chlorine residual and modal contact time measured at the same period. The modal contact time is the amount of time that elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance of the chlorination chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber. The peak dry weather design flow is the arithmetic mean of the maximum peak flow rates sustained over some period of time (for example three hours) during the maximum 24-hour dry weather period. Dry weather period is defined as periods of little or no rainfall.

         For purposes of calculating and demonstrating compliance with the CT requirement, within 30 days after the initial delivery of recycled water, the City shall complete tracer studies under four different flow rates (the maximum, the minimum, and two points in between) to determine the respective modal contact time at the chlorine contact basin. The studies shall follow the protocol outlined in *Tracer Studies in Water Treatment Facilities: A Protocol and Case Studies* published by the American Water Works Association Research Foundation. A curve of flow rate vs. modal contact time, based on the study results, shall be used for estimating the modal contact time at a given flow rate, which is essential for the CT calculation. A final report on the tracer studies shall be submitted to the

DHS and the Regional Board within 30 days after the completion of the studies.

In the interim period before the completion of tracer studies, the theoretical retention time based on the volume of the chlorine contact basin and the design flow rate shall be used as the modal contact time in the calculation of CT.

b. A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.
F-specific bacteriophage MS-2 means a strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC 15597B1) and is grown on lawns of E. coli (ATCC 15597).

B. The median concentration of total coliform bacteria measured in the disinfected wastewater does not exceed a most probable number (MPN) or a colony forming unit (CFU) of 2.2 per 100 milliliters based on the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN/CFU of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN/CFU of 240 total coliform bacteria per 100 milliliters.

C. A filtered wastewater shall be an oxidized wastewater that has been coagulated and passed through natural undisturbed soil or a bed of filter media under the following conditions:

1. At a rate that does not exceed 5 gallons per minute per square foot of surface area in mono, dual or mixed media gravity, upflow or pressure filtration systems, or does not exceed 2 gallons per minute per square foot of surface area in a traveling bridge automatic backwash filter; and,

2. The turbidity of the filtered wastewater does not exceed any of the following:

   i. An average of 2 NTU within a 24-hour period;

   ii. 5 NTU more than 5 percent of the time within a 24-hour period; and

   iii. 10 NTU at any time.

   "NTU" (Nephelometric Turbidity Unit) is a turbidity measurement determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light as measured by Method 2130 B. in *Standard Methods for the Examination of Water and Wastewater, 20th Edition*;

Eaton, A. D., Clesceri, L. S., and Greenberg, A. E., Eds; American Public Health Association, Washington, D.C., 1998; p2-8.

3. Continuous chemical addition upstream of the filters is not required if

   i. Final effluent turbidity does not exceed 2 NTU;

   ii. The turbidity of the influent to the filters is continuously measured;

   ii. The influent turbidity to the filters does not exceed 5 NTU for more than 15 minutes in any 24-hour period and never exceeds 10 NTU; and,

   iv. There is the capability to automatically activate chemical addition or divert the wastewater should the filter influent turbidity exceed 5 NTU for more than 15 minutes.

D. A coagulated wastewater shall be an oxidized wastewater in which colloidal and finely divided suspended matter have been destabilized and agglomerated upstream from a filter by the addition of suitable floc-forming chemicals.

E. An oxidized wastewater shall be wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

II. SPECIFICATIONS FOR USE OF RECYCLED WATER

The City shall oversee the end-users such that the following requirements are complied with.

1. The disinfected tertiary recycled water may be used for those applications specified in Title 22, Division 4, Chapter 3, Water Recycling Criteria of the California Code of Regulations. Should the water not meet the definition of tertiary recycled water, but instead meet the definition of disinfected secondary -23 recycled water, it may only be used for those applications specified for use of disinfected secondary -23 recycled water in Title 22, Division 4, Chapter 3, Water Recycling Criteria of the California Code of Regulations.

   A. In a letter dated August 10, 2010, California Department of Public Health finds that recycled water for dust control at permanent facilities is an appropriate and safe use for this application. Permanent facilities include but are not limited to horse ranches, open fields, and fairgrounds.

2. Indirect potable uses and groundwater recharge are not covered by this Order.

3. Recycled water shall not be used other than those specified in section II.1 unless a revision to engineering report has been submitted to and approved by the DHS for such other uses and/or requirements for these uses have been prescribed by this Regional Board, in accordance with Section 13523 of the California Water Code.

Any additionally approved recycled water applications to this permit can be approved by the Executive Officer of this Regional Board.

III. USE AREA REQUIREMENTS

Use area is an area of recycled water use with defined boundaries, which may contain one or more facilities where recycled water is used.

The City shall be responsible to ensure that all users of recycled water comply with the following:

1. No irrigation areas with disinfected tertiary recycled water shall be located within 50 feet of any domestic water supply well unless all of the following conditions have been met:

   A. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface;

   B. The well contains an annular seal that extends from the surface into the aquitard;

   C. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities;

   D. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well; and,

   E. The owner of the well approves of the elimination of the buffer zone requirement.

2. There shall be no storage or impoundment of disinfected tertiary recycled water within 100 feet of any domestic water supply well.

3. No irrigation shall take place within 50 feet of any open reservoir, subsurface storage reservoir, or stream currently used as a source of domestic water.

4. Use of recycled water shall comply with the following:

   A. Recycled water shall be applied at such a rate and volume as not to exceed vegetative demand and soil moisture conditions. Special precautions must be taken to: prevent clogging of spray nozzles, prevent over-watering, and minimize the production of run-off. Pipelines shall be maintained so as to prevent leakage;

   B. Any incidental runoff from recycled water projects should be handled as follows and shall not be considered a violation of this Order:

1. Where these WRRs prohibit the discharge of recycled water to waters of the State or the United Sates and discharges are not expected to occur, occasional runoff should not trigger the need for either an individual NPDES permit or enforcement action.

2. If discharges from recycling project area occur routinely, such discharges can be regulated under municipal storm water NPDES permit in most cases.

3. In limited cases, where necessary to address a water quality concern, discharges of recycled water to surface waters may be regulated under an individual NPDES permit. A NPDES permit, however, should not be issued unless necessary to achieve water quality objectives.

C. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities, and shall not contact any drinking water fountain; and,

D. Recycled water shall not be used for irrigation during periods of rainfall and/or runoff.

E. Recycled water used for dust control at permanent facilities shall employ the Best Management Practices as described in Attachment 1. The vehicles to be used for transporting recycled water for dust control shall be equipped with an air gap filling port for receiving potable or recycled water, or shall be equipped with two separate hoses, one for potable and one for recycled water, which shall be of different sizes to prevent cross connection of sources. In addition the spray heads and nozzles shall be configured and maintained to minimize runoff, ponding, and drift.

5. All recycled water use areas that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK". Each sign shall display an international symbol similar to that shown in Figure 1. An alternative signage and wording may be used provided they are approved by the DHS.

6. No physical connection shall be made or allowed to exist between any recycled water piping and any piping conveying potable water, except as allowed under Section 7604 of Title 17, California Code of Regulations.

7. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs (a faucet or similar device to which a common garden hose can be readily attached). Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access.

8. Recycled water use shall not result in earth movement in geologically unstable areas.

IV. REQUIREMENTS FOR DUAL-PLUMBED SYSTEM

1. "Dual plumbed" means a system that utilizes separated piping systems for recycled water and potable water within a facility and where the recycled water is used for either of the following purposes:

   A. To serve plumbing outlets (excluding fire suppression systems) within a building, or

   B. Outdoor landscape irrigation at individual residences.

2. The public water supply shall not be used as a backup or supplemental source of water for a dual-plumbed recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of Section 7602 (a) and 7603 (a) of Title 17, California Code of Regulations, and that such connection has been approved by the DHS and/or its delegated local agency.

3. The City shall not deliver recycled water to a facility using a dual-plumbed system unless the report required pursuant to Section 13522.5 of the California Water Code, and which meets the requirements set forth in sections IV.4 and/or IV.5 of this Order, has been submitted, and approved by, the DHS and/or its delegated local agency. The Regional Board shall be furnished with a copy of the DHS approval together with the aforementioned report within 30 days following the approval.

4. The report pursuant to Section 13522.5 of the California Water Code shall contain the following information for dual-plumbed systems, in addition to the information required by Section 60323 of Title 22, California Code of Regulations (Engineering Report):

   A. A detailed description of the intended use site identifying the following:

      1. The number, location, and type of facilities within the use area proposing to use dual-plumbed systems;

      2. The average number of persons estimated to be served by each facility on a daily basis;

      3. The specific boundaries of the proposed use site including a map showing the location of each facility to be served;

      4. The person or persons responsible for operation of the dual-plumbed system at each facility; and

      5. The specific use to be made of the recycled water at each facility.

B. Plans and specifications describing the following:

1. Proposed piping system to be used;

2. Pipe locations of both the recycled and potable systems;

3. Type and location of the outlets and plumbing fixtures that will be accessible to the public; and

4. The methods and devices to be used to prevent backflow of recycled water into the public water system.

C. The methods to be used by the City to assure that the installation and operation of the dual-plumbed system will not result in cross connections between the recycled water piping system and the potable water piping system. These shall include a description of pressure, dye or other test methods to be used to test the system every four years.

5. Prior to the initial operation of the dual-plumbed recycled water system and annually thereafter, the dual-plumbed system within each facility and use site shall be inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in section IV.4.C. of this Order. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection and testing for the prior year shall be submitted to the DHS within 30 days following completion of the inspection or testing.

6. The City shall notify the DHS of any incidence of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of discovery of the incident.

7. Any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with Section 7605 of Title 17, California Code of Regulations.

V. GENERAL REQUIREMENTS

1. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.

2. Bypass, discharge, or delivery to the use area of inadequately treated recycled water, at any time, is prohibited.

3. The recycling facility shall be adequately protected from inundation and damage by storm flows and run-off.

4. Adequate freeboard and/or protection shall be maintained in the recycled water storage tanks and process tanks to ensure that direct rainfall will not cause overtopping.

5. The wastewater treatment and use of recycled water shall not result in problems caused by breeding of mosquitoes, gnats, midges, or other pests.

7. Odors of sewage origin shall not be perceivable any time outside the boundary of the treatment facility.

8. The City shall, at all times, properly operate and maintain all treatment facilities and control systems (and related appurtenances) which are installed or used by the City to achieve compliance with the conditions of this Order. Proper operation and maintenance includes: effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

9. A copy of these requirements shall be maintained at the water reclamation facility so as to be available at all times to operating personnel.

10. The City shall furnish each user of recycled water a copy of these requirements and ensure that the requirements are maintained at the user's facility so as to be available at all times to operating personnel.

11. The current Title 22 Engineering Report for the San Fernando Valley Water Recycling Project was issued on June 1992. In accordance with section 13522.5 of the California Water Code, and Title 22, Division 4, Chapter 3, Article 7, Section 60323 of the California Code of Regulations, the City shall file an updated engineering report, prepared by a properly qualified engineer registered in California, for any material change or proposed change in character, location or volume of the recycled water or its uses, and send copy to the Regional Board and to the DHS for review and approval within one year from the adoption date of January 11, 2007. This updated engineering report shall describe the current treatment plant, their impacts on the recycled water operation, and the operation and maintenance management plan, including a preventive (fail-safe) procedure and contingency plan for controlling accidental discharge and/or delivery to users of inadequately treated recycled water.

VI. PROVISIONS

1. The City shall continue to submit plans for proposed and as-built drawings for recycled water projects to and obtain approval from DHS or its delegated local health agency for each recycled water project. The American Water Works Association Guidelines for the Distribution of Non-Potable Water shall be followed, including installation of purple pipe, adequate signs, etc. As-built drawings shall show the final locations of the potable water, sewer, and recycled water pipelines; and indicate adequate separation between the recycled water and potable domestic water lines, which shall also be marked clearly or labeled using separate colors for identification.

In addition, a copy of each application to DHS for a recycled water project shall be delivered to the RWQCB for inclusion in the administrative file with the following information:

A. A description of each use area including, but not limited to, a description of what will be irrigated (e.g., landscape, specific food crop, etc.); method of irrigation (e.g., spray, flood, or drip); the location of domestic water supply facilities adjacent to the use areas; site containment measures; the party responsible for the distribution and use of the recycled water at the site; identification of other governmental entities which may have regulatory jurisdiction over the reuse site(s).

B. A map showing specific areas of use, areas of public access, surrounding land uses, the location and construction details of wells in or near the use areas, location and type of signage, the degree of potential access by employee or the public, and any exclusionary measures (e.g. fencing).

The City shall submit to the Regional Board a copy of the approved Recycled Water Project for the recycled water distribution system and the DHS approval within 30 days of approval.

2. For any extension or expansion of the recycled water system or use areas not covered by the Recycled Water Plan, the City shall submit a report detailing the extension or expansion plan for approval by the DHS or its delegated local health agency. The plan shall include, but not limited to, the information specified in sections VI.1.A. and B. above. Following construction, as-built drawings shall be submitted to the DHS or its delegated local health agency for approval prior to delivery of recycled water.

   The City shall submit to the Regional Board a copy of the approved expansion plan and the DHS approval within 30 days of approval.

3. If the recycled water system lateral pipelines are located on an easement contiguous to a homeowners private property and where there is a reasonable probability that an illegal or accidental connection to the recycled water line could be made, the City shall provide a buffer zone or other necessary measures between the recycled water lines and the easement to prevent any illegal or accidental connection to the recycled water lines. The City shall notify homeowners about the recycled water lateral and restrictions on usage of recycled water.

4. The City shall inspect the recycled water use areas on a periodic basis. The City shall propose an inspection schedule, based the type of use site, for approval by DHS within 90 days of the effective date of this permit. A report of findings of the inspection shall be submitted to the DHS, County Health Department, and the Regional Board on a quarterly basis.

5. The City shall submit to the Regional Board, under penalty of perjury, technical self-monitoring reports according to the specifications contained in the Monitoring and Reporting Program as directed by the Executive Officer.

6. The City shall notify this Regional Board and the DHS by telephone or electronic means within 24 hours of knowledge of any violations of recycled water use conditions or any adverse conditions as a result of the use of recycled water from this facility; written confirmation shall follow within 5 working days from date of notification.

7. The City shall notify this Regional Board and the DHS, immediately by telephone, of any confirmed coliform counts that could cause a violation of the requirements. This information shall be confirmed in the next monitoring report. For any actual coliform limit violation that occurred, the report shall also include the cause(s) of the high coliform counts, the corrective measures undertaken (including dates thereof), and the preventive measures undertaken to prevent a recurrence.

8. The direct use of Title 22 tertiary treated and disinfected recycled water for impoundments and irrigation could affect the public health, safety, or welfare; requirements for such uses are therefore necessary in accordance with Section 13523 of the Water Code.

9. Based on February 24, 2004 memorandum, recycled water ponds should follow the following:

    a. The recycled water pond is designed not to spill during wet months. Under this circumstance, spills that occur under extreme weather conditions or emergencies should not be considered for enforcement.

    b. Recycled water ponds can be drained and refilled with potable water or flushed with potable water prior to the onset of the wet season. Flushing will not displace all of the recycled water but the water quality threat is minimal.

    c. Recycled water ponds designed to spill recycled water during the wet season can be regulated under Phase 1 municipal storm water permits or under a general storm water permit. These permits require reduction of pollutants to the maximum extent practicable. The permits also incorporate receiving water limitations requiring the implementation of an iterative process for addressing any exceeding of water quality objectives.

10. This Order does not exempt the City from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize the recycling and use facilities; and they leave unaffected any further constraint on the use of recycled water at certain site(s) that may be contained in other statutes or required by other agencies.

11. This Order does not alleviate the responsibility of the City to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency. Expansion of the recycled water distribution facility shall be contingent upon issuance of all necessary requirements and permits, including a conditional use permit.

12. After notice and opportunity for a hearing, this Order may be modified, revoked and reissued, or terminated for cause, that include, but is not limited to: failure to comply with any condition in this Order; endangerment of human health or environment resulting from the permitted activities in this Order; obtaining this Order by misrepresentation or failure to disclose all relevant facts; acquisition of new information which could have justified the application of different conditions if known at the time of Order adoption.

    The filing of a request by the City for modification, revocation and reissuance, or termination of the Order; or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

13. The City shall furnish, within a reasonable time, any information the Regional Board or the DHS may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The City shall also furnish the Regional Board, upon request, with copies of records required to be kept under this Order for at least three years.

14. In an enforcement action, it shall not be a defense for the City that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the City shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

15. This Order includes the Water Recycling Requirements (WRRs) and the attached Monitoring and Reporting Program (MRP, CI No. 9198). If there is any conflict between provisions stated in the MRP and these WRRs, those provisions stated herein before prevail.

VII. EFFECTIVE DATE OF THE ORDER

This Order takes effect upon its adoption.

I, Samuel Unger, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on February 3, 2011.

Samuel Unger
Samuel Unger, P.E.
Executive Officer

/RMedina

ATTACHMENT 1

Best Management Practices

LADWP Water Recycling

Recycled Water User Guidelines

DUST CONTROL

ALLOWED USE

The California Code of Regulations, Title 22 Section 60307(b)(6) allows the use of recycled water for dust control on streets and roads. In addition, this Dust Control Guideline has been approved by the California Department of Public Health for dust control within facilities (pending DPH). Recycled water is NOT allowed for drinking, washing, or animal water supply.

REQUIREMENTS FOR USE

- Vehicles used for collecting and distributing recycled water for dust control shall:
  - Have an adequate tank and plumbing system to ensure that leaks and ruptures will not occur due to normal use.
  - Either be equipped with two risers, one for potable water and one for recycled water, or each tank used shall be equipped with approved air-gap separation between the filler tube and the tank.
  - Have color-coded risers, hoses, and fittings: blue for potable water and purple for recycled water.
  - Be equipped with uniquely sized fittings to prevent accidental connection between the potable and recycled systems.
  - Be equipped with spray heads/nozzles configured to minimize runoff, ponding, or spray drift.
  - Be equipped with control valves configured such that recycled water can be applied in a controlled fashion on the site and completely retained during transit.
  - Be clearly labeled as specified in the "Signage Requirements" section on Page 2.
- Prior to use, _____ will inspect the Users' vehicles to ensure compliance with the requirements listed above.
- Each vehicle tank used to store and/or transport recycled water must be flushed and disinfected prior to storage and/or transport of potable water or recycled water of better quality.
- User must maintain a log recording details of all recycled water deliveries (date, location, volume, and end use).
- Any storage facility containing recycled water for reuse applications shall be managed in a manner to control odor.
- Sites shall be designed and operated using Best Management Practices (BMPs) as stated below, or as revised by LADWP, to prevent recycled water spray, mist, or surface flow from either leaving the site or reaching:
  1. Any storm drain or surface water with year-round flow located adjacent to the Site;
  2. Areas with public access (e.g. dwellings, designated outdoor eating areas, or food handling facilities);
  3. Drinking fountains, unless specifically protected with a shield device.

BEST MANAGEMENT PRACTICES

- For dust control adjacent to surface waters, install runoff barriers, such as vegetative strips, collection system, or 100-foot buffers.
- Maintain distance buffers if applying recycled water near sensitive land uses.
- Do not apply recycled water for dust control during strong winds.
- The application method must not cause ponding of water. For example: avoid excessive application volumes, use after heavy rains, or application to excessively uneven surfaces.
- Recycled water must not run off the site where it is applied. Conduct visual inspections to determine the necessary delivery rates and volumes. If runoff cannot be restricted by application method (for example, if the ground surface is strongly sloped or the soil has low water permeability), runoff needs to be collected via a drainage system and reused.
- If hand watering is used, keep the hose low to ground and point it in the direction of the wind to prevent spray drift.
- Signage should be displayed at site of storage, during watering, and while the area is still wet (see "Signage Requirements" on Page 2).
- When watering is completed, drain hose and return hose to secure position. Ensure that there is no risk that recycled water may be used for drinking purposes or animal water supply.

LADWP Water Recycling

Recycled Water User Guidelines

DUST CONTROL

HEALTH AND SAFETY GUIDELINES

- All workers that are likely to be present during dust control activities are required to have training in the proper use of recycled water. Supervisory personnel and Site supervisors should be held accountable to ensure that employees are using recycled water properly.
- It is the responsibility of the User to train all operations personnel so they are familiar with the use of recycled water. Training for operations personnel should include, but not be limited to, awareness of the following:
  1. Working with recycled water IS SAFE if common sense is used and if appropriate regulations followed.
  2. Recycled water, although highly treated, is non-potable.
  3. Conditions such as ponding and runoff are not allowed.
  4. Good personal hygiene must be followed (e.g. wash hands after working with recycled water, do not consume food or drink while working with recycled water, cover wounds to prevent contact with recycled water).
  5. Cross-connections between the recycled water system and the potable water system must not be allowed to exist.

DID YOU KNOW?

Tertiary treated recycled water is considered safe for full-body contact

California Code of Regulations Title 22, 60305(a) & 60301.220

Report any accidental spills of recycled water or personal hygiene issues that have received medical attention to LADWP for action and record keeping. LADWP will initiate normal incident management procedures.

SIGNAGE REQUIREMENTS

Vehicle-Mounted Recycled Water Storage Tanks

While using vehicle-mounted recycled water for dust control, the User must install, maintain, and keep in place three magnetic signs (on both sides and the rear of each vehicle, at the outlet) indicating that recycled water is in use. The signs must contain the words "RECYCLED WATER – DO NOT DRINK" in 2-inch high letters on a purple background and the "Do Not Drink" symbol, as shown to the right. All labels and signs must be placed where they can easily be seen by the personnel using the vehicle.

Other Equipment and Devices

All stationary pipe, materials, and equipment used to carry recycled water onsite (such as pipes, air vacuum relief valves, pressure reducing valves, pumps, pump control valves, etc.) must be properly identified. If the User installs any stationary recycled water equipment, information on required markings and tagging is found in the 2005 Los Angeles County Reclaimed Water Advisory Committee Recycled Water User Manual (RW User Manual), Page 23.

USER AGREEMENTS

All potential recycled water users in the City of Los Angeles must meet LADWP's requirements and must enter into a written agreement with LADWP. LADWP reserves the right to take any action necessary with respect to the operation of the User's onsite recycled water operations in order to safeguard public health and to meet applicable regulations and permits. For information on User Agreements, refer to the RW User Manual, Pages 8 and 33.

The City of Los Angeles has safely used recycled water since 1979 for irrigation and industrial purposes. For more information about recycled water, treatment processes, and availability in the City of Los Angeles, please contact the LADWP Water Recycling Group at (213) 367-3637 or (213) 367-4141 or visit www.ladwp.com

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. 01-043
(File No. 94-062)

WATER RECYCLING REQUIREMENTS
FOR
WEST BASIN MUNICIPAL WATER DISTRICT
(West Basin Water Recycling Facility)
(Title 22 Recycled Water)

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board), finds:

1. West Basin Municipal Water District (West Basin or Producer) owns and operates the West Basin Water Recycling Facility (Recycling Facility) at 1935 Hughes Way, El Sengundo, California. The Recycling Facility provides tertiary treatment to a portion of the secondary treated wastewater (Hyperion effluent) from the City of Los Angeles Hyperion Treatment Plant (Hyperion) and produces a disinfected tertiary recycled water, that meets Title 22 California Code of Regulations standards for industrial uses and landscape irrigation. The production and use of the recycled Title 22 water are regulated under Water Recycling Requirements contained in Order No. 94-113, adopted by this Regional Board on October 31, 1994, as amended by Order No. 97-070 and Order No. 98-084, adopted by this Regional Board on May 12, 1997, and November 2, 1998, respectively.

2. California Water Code Section 13263(e) provides that all waste discharge requirements shall be reviewed periodically, and, upon such review, may be revised by the Regional Board. Following a review of the requirements in Order No. 94-113, its amendments, and inspections of the Recycling Facility, this Order updates Order No. 94-113 and includes additional finding, effluent limitations, updated standard provisions, and an updated monitoring and reporting program.

3. West Basin is a public agency providing wholesale recycled water to public and private purveyors. The purveyors then sell and deliver on retail the recycled water to the end-users. The purveyor is responsible to process the user's application, inspection of the point-of-use facility, and determine that the end-user has complied with all conditions of use. The actual delivery of recycled water to end-users is subject to approval of State Department of Health Services (hereinafter State DOHS) and/or its delegated local health agency.

4. The Recycling Facility is currently designed to produce up to 37.5 million gallons per day (mgd) of recycled water. The Recycling Facility consists of two separate treatment plants: One train that produces recycled water for landscape and agricultural irrigation, and for industrial application is referred to as the Title 22 Plant. The other that produces recycled water for barrier injection along the coastal reaches of aquifers to mitigate sea water intrusion is referred to as the Barrier Plant.

5. Currently, the Title 22 Plant provides tertiary treatment to a portion of Hyperion effluent and can produce up to 30 mgd of disinfected tertiary recycled water that meets Title 22 California Code of Regulations standards (hereinafter Title 22 recycled water). The Title 22 Plant treatment process consists of coagulation, flocculation, monomedia anthracite coal filtration, and chlorine disinfection. In 1997 Phase II Expansion, the capacity of the Title 22 Plant was increased form 15 mgd to 30 mgd of recycled water. This Order prescribes requirements for use of the Title 22 recycled water in irrigation, and industrial application.

6. The Barrier Plant has a design capacity of up to 7.5 mgd of product water. The Barrier Plant provides advanced treatment to a portion of Hyperion effluent using two parallel treatment schemes with three reverse osmosis (RO) treatment trains. Each treatment train has a design capacity of 2.5 mgd. Treatment trains 1 and 2 use pre-decarbonation, lime clarification, recarbonation, multi-media filtration, chlorine addition, RO, post-decarbonation, and pH stabilization. Treatment train 3 uses microfiltration, RO, post-decarbonation, chlorine disinfection, and pH adjustment. The flows from all three treatment trains are combined prior to leaving the treatment plant. The recycled water produced by the Barrier Plant is blended with potable water; and the blend is then injected into the West Basin Barrier Project. Water Reclamation Requirements contained in Order No. 95-014 prescribes requirements for the recharge of recycled water into the barrier. The waste brine generated by the RO system is regulated under the National Pollutant Discharge Elimination System (NPDES) permit No. CA0063401 for its discharge into Santa Monica Bay through Hyperion five-mile outfall.

7. In 2000, a total of 5,724 million gallons (MG) of the Title 22 recycled water were produced. The recycled water produced was distributed to 148 users. The Mobil Oil Refinery, the Chevron El Segundo Refinery (Chevron Refinery), and the British Petroleum Refinery are three largest users using 2,156 MG, 1,055 and 1,032 MG, respectively.

8. Chevron Refinery will use up to another one (1) mgd of the Title 22 recycled water for injection into the Old Dune Sand aquifer in the West Coast Basin as part of Chevron's Liquid Hydrocarbon Recovery Program. Since the groundwater underlying the Chevron Refinery was de-designated for Municipal and Domestic Supply (MUN) beneficial use by this Regional Board in 2000, the condition set forth in the State DOHS approval letter dated June 15, 1998 has been met. However, the use of the nitrified Title 22 recycled water instead of potable water for injection requires the revision of the Chevron's existing waste discharge requirements contained in Order No. 97-113.

9. West Basin is constructing a third treatment system that will be known as the Boiler Feedwater treatment train in its Phase III Expansion. Up to 6 mgd of Hyperion effluent will be fed into the Boiler Feedwater treatment train, which will produce about 4.32 mgd of high purity (low- and high-pressure) boiler feedwater for use in the Chevron Refinery's boilers. The low-pressure stream will produce up to 1.73 mgd of recycled water using: microfiltration, RO, post-decarbonation, and softening. The high-pressure stream will produce up to 2.59 mgd of recycled water using: microfiltration, 1st pass RO, post-decarbonation, and 2nd pass RO. The low- and high-pressure boiler feedwater will be delivered to the Chevron Refinery using two newly constructed parallel pipelines. The boiler feedwater will be recirculating within the system without any significant discharge

to surface water. The blowdown from the Chevron boiler will be directed into the Chevron's inplant wastewater collection system and treated by its existing wastewater treatment facility before discharge to the ocean.

The Boiler Feedwater treatment train's RO process will produce approximately 0.81 mgd of waste brine that is also regulated under NPDES permit No. CA0063401. The Boiler Feedwater treatment system will be in operation in April 2001. The production and use of the boiler feedwater are also regulated under this Order.

Figure 1 is a flow schematic for the Recycling Facility that includes the existing Title 22 Plant and Barrier Plant as well as the proposed Boiler Feedwater treatment train.

10. Since the Recycling Facility is operating on a side stream (portion of secondary treated effluent) from the Hyperion Treatment Plant, redundancy in process units nor standby or emergency power during outages is not provided. The Recycling Facility layout allows off-specification recycled water to be pumped back and retreated in the Title 22 plant until the effluent meets the specifications. If retreatment of the recycled water would be impractical, the off-specification water would be discharged to the Hyperion five-mile outfall.

11. On June 13, 1994, this Regional Board adopted a revised *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coast Watersheds of Los Angeles and Ventura Counties (Basin Plan).* The Basin Plan contains beneficial uses and water quality objectives for groundwater within the West Coast Basin hydrologic area.

12. The beneficial uses of groundwater in the West Coast Basin are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

13. Section 13523 of the California Water Code provides that a regional board, after consulting with and receiving the recommendations of the State DOHS or its delegated local health agency, and after any necessary hearing, shall, if it determines such action to be necessary to protect the public health, safety, or welfare, prescribe water reclamation requirements for water which is used or proposed to be used as recycled water. Section 13523 further provides that such requirements shall include, or be in conformance with, the statewide recycling criteria.

14. The use of recycled water for irrigation in parks, golf courses, freeway landscapes, school yards, cemeteries, and other landscaped or agricultural areas; and as cooling water in industrial cooling towers could affect public health, safety, or welfare; therefore requirements are necessary.

15. Pursuant to Section 60323, Title 22 of the California Code of Regulations, the Regional Board has consulted with the State DOHS regarding the proposed production, distribution, and use of recycled water; and has incorporated the department's recommendations in this Order.

16. The State DOHS adopted revised Water Recycling Criteria that became effective on December 2, 2000. The revisions expand the range of allowable uses of recycled water, established criteria for those new users, and clarify some of the ambiguity contained in the existing regulations.

17. The requirements contained in this Order, as they are met, will be in conformance with the goals and objectives of the Basin Plan and requirements of the Water Code.

18. Pursuant to Section 402(p) of the Clean Water Act and 40 CFR Parts 122, 123 and 124, the State Water Resources Control Board (State Board) adopted general NPDES permits to regulate storm water discharges associated with industrial activity (State Board Order No. 97-03-DWQ adopted on April 17, 1997) and construction activity (State Board Order No. 92-08-DWQ adopted in August 1992). Storm water discharge from the Recycling Facility is subject to requirements under this general permit. The Discharger has developed and implemented a Storm Water Pollution Prevention Plan since 1995.

19. West Basin had prepared an engineering report on its proposed production, distribution, and use of recycled water in irrigation and industrial cooling tower applications on April 14, 1994. The State DOHS approved the engineering report on October 19, 1994. Subsequently, West Basin submitted an amended Engineering Report on August 2, 1996, and an addendum to the Report on March 5, 1997, for the Phase II Expansion Project that increased design capacity from 15 mgd to 30 mgd. The State DOHS approved the amended Engineering Report on April 3, 1997. For the production, distribution, and use of boiler feedwater, West Basin filed another amended Engineering Report for the Phase III Expansion Project on September 12, 2000. This amended Engineering Report was approved by the State DOHS on October 23, 2000.

20. West Basin prepared and certified in May 1991 an Environmental Impact Report (EIR) on the water reclamation project. The EIR identified no significant adverse impact to water quality as a result of the discharge. The Discharger also prepared a Mitigated Negative Declaration for the Phase III expansion at the Recycling Facility. The West Basin Municipal Water District Board of Directors approved the Mitigated Negative Declaration and a Notice of Determination was filed with the Los Angeles County Clerk's Office on December 21, 1999. No comments were received during the review period. Therefore, the Mitigated Negative Declaration became final.

21. Pursuant to California Water Code Section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to the State Water Resources Control Board, P.O. Box 100, 901 P Street, Sacramento, CA 95812, within 30 days of adoption.

22. This update and issuance of water recycling requirements for an existing facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 2100 et seq.) in accordance with California Code of Regulations, Title 14, Chapter 3, Section 15301.

The Regional Board has notified the Producer and interested agencies and persons of its intent to issue Water Recycling Requirements for the use of recycled water and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to the use of recycled water and the tentative water recycling requirements.

IT IS HEREBY ORDERED that West Basin Municipal Water District shall comply with the following:

I. RECYCLED WATER LIMITATIONS

A. Conventionally Treated Title 22 Recycled Water

1. Recycled water used for irrigation and industrial application other than boiler feed shall be limited to disinfected tertiary recycled water only.

A disinfected tertiary recycled water is a filtered and subsequently disinfected wastewater that meets the following criteria:

a. The filtered wastewater has been disinfected by either:

(1) A chlorine disinfection process following conventional treatment or its equivalent that provide a CT (the product of total chlorine residual and modal contact time* measured at the same period) value of not less than 450 milligram-minutes per liter at all times with a modal time of at least 90 minutes, based on peak dry weather design flow; or

* Modal contact time means the amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance to chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

(2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactive and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purposes of the demonstration.

b. The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

A filtered wastewater is an oxidized wastewater that has been coagulated and passed through natural undisturbed soil or a bed of filter media so that the turbidity of the filtered wastewater does not exceed any of the following:

- An average of 2 NTU within a 24-hour period;
- 5 NTU more than 5 percent of the time within a 24-hour period; and
- 10 NTU at any time.

An oxidized wastewater is wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen. The oxidized wastewater shall not exceed 20 milligrams per liter (mg/L) total organic carbon (TOC), 30 mg/L suspended solids (SS), and 30 mg/L biochemical oxygen demand (BOD).

2. The Title 22 recycled water shall not contain constituents with concentrations in excess of the following limits:

Constituent	Units	Maximum Limitations
$BOD_5 20^oC$	mg/L	20
Oil and grease	mg/L	10
Suspended solids	mg/L	20
Settleable solids	ml/L	0.2
Total organic carbon	mg/L	20
Total dissolved solids	mg/L	800
Chloride	mg/L	250
Sulfate	mg/L	250
Boron	mg/L	1.5
Nitrate + nitrite (sum as nitrogen)	mg/L	10

B. RO Treated Boiler Feed Recycled Water

1. Recycled water used for the boiler feed shall be at least disinfected secondary-23 recycled water.

A disinfected secondary-23 recycled water means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30 day period.

C. The recycled water used by Chevron for the injection into the Old Dune Sand aquifer for Chevron's Liquid Hydrocarbon Recovery Program shall not exceed one (1) million gallons per day.

D. The pH of the Title 22 recycled water shall at all times be within the range of 6.5 to 8.5 pH units. This pH limitation is not applicable to the boiler feed recycled water since no discharge of the boiler feed recycled water occurs.

E. The recycled water shall not contain trace, toxic and other constituents in concentrations exceeding the current applicable maximum contaminant or action levels for drinking water established by the State DOHS or at levels that adversely affect the beneficial uses of receiving groundwater.

F. The radioactivity of the recycled water shall not exceed the limits specified in Sections 64441 and 64443, Article 5, Chapter 15, Title 22 of the California Code of Regulations, or subsequent revisions.

G. The recycled water shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect the beneficial uses of the receiving groundwater.

H. The recycled water shall not cause a measurable increase in organic chemical contaminants in the groundwater.

II. SPECIFICATIONS FOR USE OF RECYCLED WATER

A. The boiler feed recycled water shall be used by the Chevron Refinery only.

B. The disinfected tertiary recycled water may be used for the following:

1. Surface irrigation in the following areas:
   a. Parks and playgrounds;
   b. School yards;
   c. Residential landscaping;
   d. Unrestricted access golf courses; and
   e. Any other irrigation use not specified in this section and not prohibited by other sections of the California Code of Regulations.

2. Industrial or commercial cooling tower; and

3. Industrial boiler feed.

C. The Title 22 recycled water shall not be used other than those specified in section II.B unless an engineering report has been submitted for such other uses and/or requirements for these uses have been prescribed by this Regional Board, in accordance with Section 13523 of the California Water Code.

D. The delivery of recycled water to end-users shall be subject to approval of State DOHS and/or its delegated local agency.

E. Whenever a cooling system using recycled water employs a cooling tower, the Producer shall submit a supplemental engineering report to the Regional Board and the State DOHS, and obtain approval from the State DOHS for use of recycled water in industrial or commercial cooling tower, on a case-by-case basis.

F. Whenever a cooling system, using recycled water in conjunction with an air conditioning facility, utilizes a cooling tower or otherwise creates a mist that could come into contact with employees or members of the public, the cooling system shall comply with the following:

1. A drift eliminator shall be used whenever the cooling system is in operation.

2. A chlorine, or other, biocide shall be used to treat the cooling system recirculating water to minimize the growth of *Legionella* and other microorganisms.

G. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.

H. No irrigation with disinfected tertiary recycled water shall take place within 50 feet of any domestic water supply well or reservoir, or stream used as source of domestic water.

I. Use of recycled water shall comply with the following:

1. Any irrigation runoff shall be confined to the recycled water use area.
2. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities, and shall not contact any drinking water fountain.

J. All use areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK". Each sign shall display an international symbol similar to that shown in figure 2 to alert people who do not read English.

K. Recycled water used for irrigation shall be retained on the areas of use and shall not be allowed to escape as surface flow, except as provided for in a National Pollutant Discharge Elimination System (NPDES) permit.

For the purpose of this requirement, however, minor amounts of irrigation return water from peripheral areas shall not be considered a violation of this Order.

L. Recycled water shall be applied at such a rate and volume as not to exceed vegetative demand and soil moisture conditions. Special precautions must be taken to: prevent clogging of spray nozzles, to prevent over-watering, and minimize the production of run-off. Pipelines shall be maintained so as to prevent leakage.

M. Recycled water used for irrigation shall not be allowed to run off into recreational lakes unless it meets the criteria for such lakes.

N. No physical connection shall be made or allowed to exist between any recycled water piping and any piping conveying potable water, except as allowed under Section 7604 of Title 17, California Code of Regulations.

O. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs. Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access.

III. REQUIREMENTS FOR DUAL PLUMBED SYSTEM

A. The public water supply shall not be used as a backup or supplemental source of water for a dual-plumbed recycled water system unless the connection between the two systems is protected by an air gap separation which complies with the requirements of Section 7602 (a) and 7603 (a) of Title 17, California Code of Regulations, and the State DOHS approval of the public water system has been obtained.

B. The producer shall not deliver recycled water for any internal use to any individually-owned residential units including free-standing structure, mutiplexes, or condominiums.

C. The producer shall not deliver recycled water for internal use except for fire suppression system, to any facility that produces or processes food products or beverages.

D. The producer shall not deliver recycled water to a facility using a dual plumbed system unless the report required to Section 13522.5 of the Water Code, and which meets the requirements set forth in section III.E., has been submitted to, and approved by, the Regional Board and the State DOHS.

E. The report that shall be submitted by the Producer to the State DOHS pursuant to Section 13522.5 of the Water Code shall contain the following information for dual plumbed systems, in addition to the information required by Section 60323 of Title 22 of the California Code of Regulations:

1. A detailed description of the intended use site identifying the following:

    a. The number, location, and type of facilities within the use area proposing to use dual plumbed systems;
    b. The average number of persons estimated to be served by each facility on a daily basis;
    c. The specific boundaries of the proposed use site including a map showing the location of each facility to be served;
    d. The person or persons responsible for operation of the dual plumbed system at each facility; and
    e. The specific use to be made of the recycled water at each facility.

2. Plans and specifications describing the following:

    a. Proposed piping system to be used;
    b. Pipe locations of both the recycled and potable systems;
    c. Type and location of the outlets and plumbing fixtures that will be accessible to the public; and
    d. The methods and devices to be used to prevent backflow of recycled water into the public water system.

3. The methods to be used by the Producer to assure that the installation and operation of the dual plumbed system will not result in cross connections between the recycled water piping system and the potable water piping system. These shall include a description of pressure, dye or other test methods to be used to test the system every four years.

F. Prior to the initial operation of the dual-plumbed recycled water system and annually thereafter, the dual plumbed system within each facility and use site shall be inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in section III.E.3. above. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection and testing for the prior year shall be submitted to the State DOHS within 30 days following completion of the inspection or testing.

G. The Producer shall notify the State DOHS of any incidence of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of discovery the incident.

H. Any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with Section 7605 of Title 17, California Code of Regulations.

IV. GENERAL REQUIREMENTS

A. Bypass, discharge, or delivery to the use area of inadequately treated wastewater, at any time, is prohibited.

B. Recycled water shall not be used for irrigation during periods of extreme rainfall and/or run-off.

C. Recycled water use shall not result in earth movement in geologically unstable areas.

D. The recycling facility shall be adequately protected from inundation and damage by storm flows and run-off.

E. Adequate freeboard and/or protection shall be maintained in the recycled water storage tanks and process tanks to ensure that direct rainfall will not cause overtopping.

F. The wastewater treatment and use of recycled water shall not cause pollution or nuisance.

G. The wastewater treatment and use of recycled water shall not result in problems caused by breeding of mosquitoes, gnats, midges, or other pests.

H. The use of recycled water shall not impart tastes, odors, color, foaming, or other objectionable characteristics to the receiving groundwater.

I. The use of recycled water, which could affect the receiving ground water, shall not contain any substance in concentration toxic to human, animal, or plant life.

J. Odors of sewage origin shall not be perceivable beyond the limits of the property owned or controlled by the Producer and/or recycled water user.

V. PROVISIONS

A. A copy of these requirements shall be maintained at the water reclamation facility so as to be available at all times to operating personnel.

B. The Producer shall furnish each purveyor and user of recycled water a copy of these requirements and ensure that the requirements are maintained at the purveyor and user's facilities so as to be available at all times to operating personnel.

C. The Producer shall be responsible to ensure that all users of recycled water comply with the specifications and requirements for such use.

D. The Producer shall, at all times, properly operate and maintain all treatment facilities and control systems (and related appurtenances) which are installed or used by the Producer to achieve compliance with the conditions of this Order. Proper operation and maintenance includes: effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

E. The Producer shall submit to the Regional Board, for approval of the Executive Officer, within 90 days of adoption of this Order an operating and maintenance management plan, including a preventive (fail-safe) procedure and contingency plan for controlling accidental discharge and/or delivery to users of inadequately treated wastewater.

F. Supervisors and operators of the wastewater reclamation facility shall possess a certificate of appropriate grade as specified in Title 23, California Code of Regulations, Section 3680 or subsequent revisions.

G. The Producer shall submit to the Regional Board, under penalty of perjury, technical self-monitoring reports according to the specifications contained in the Monitoring and Reporting Program as directed by the Executive Officer.

H. The Producer shall notify this Regional Board and the State DOHS, by telephone within 24 hours, of any violations of recycled water use conditions or any adverse conditions as a result of the use of recycled water from this facility; written confirmation shall follow within one week.

I. The Producer shall notify this Regional Board and the State DOHS, immediately by telephone, of any confirmed coliform counts that could cause a violation of the requirements, including the date(s) thereof. This information shall be confirmed in the

next monitoring report; in addition, for any actual coliform limit violation that occurred, the report shall also include the cause(s) of the high coliform counts, the corrective measures undertaken (including dates thereof), and the preventive measures undertaken to prevent a recurrence.

J. In accordance with Section 13522.5 of the California Water Code, and Title 22, Division 4, Chapter 3, Article 7, Section 60323 of the California Code of Regulations, Producer shall file an engineering report, prepared by a properly qualified engineer registered in California, of any material change or proposed change in character, location or volume of the recycled water or its uses to the Regional Board and to the State DOHS.

K. For any extension or expansion of the recycled water system or use areas, the Producer shall submit a report detailing the extension or expansion plan for approval of the State DOHS. Following construction, as-built drawings shall be submitted to the State DOHS for approval prior to delivery of recycled water. The Executive Officer shall be furnished with as-built drawings and a copy of the State DOHS approval.

L. The Producer shall notify the Executive Officer, in writing, at least 30 days in advance of any proposed transfer of ownership of the reclamation facility and responsibility for complying with this Order. The notice shall include a written agreement between the existing and new Producer indicating the specific date for the transfer of responsibility for compliance with this Order. The agreement shall include an acknowledgement that the existing Producer is liable for any violations that occurred up to the transfer date and the new Producer is liable from the transfer date on.

M. The Producer shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the Producer's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
4. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location.

N. The Producer must comply with all conditions of these water recycling requirements. Violations may result in enforcement actions, including Regional Board orders or court orders, requiring corrective action or imposing civil monetary liability, or in modification or revocation of these requirements.

O. These requirements do not exempt the Producer from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize the reclamation and use facilities; and they leave unaffected any further constraint on the

use of recycled water at certain site/s which may be contained in other statutes or required by other agencies.

P. This Order does not alleviate the responsibility of the Producer to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency. Expansion of the reclamation facility shall be contingent upon issuance of all necessary requirements and permits, including a conditional use permit.

Q. After notice and opportunity for a hearing, this Order may be modified, revoked and reissued, or terminated for cause, which include but is not limited to: failure to comply with any condition of in this Order; endangerment of human health or environment resulting from the permitted activities in this Order; obtaining this Order by misrepresentation or failure to disclose all relevant facts; acquisition of new information which could have justified the application of different conditions if known at the time of Order adoption.

The filing of a request by the Producer for modification, revocation and reissuance, or termination of the Order; or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

R. The Producer shall furnish, within a reasonable time, any information the Regional Board or the State DOHS may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Producer shall also furnish the Regional Board, upon request, with copies of records required to be kept under this Order.

S. The provisions of these water recycling requirements are severable. If any provision of these requirements is found invalid, the remainder of these requirements shall not be affected.

T. In an enforcement action, it shall not be a defense for the Producer that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure the treatment facility, the Producer shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

U. This Order includes the attached "Standard Provisions ". If there is any conflict between provisions stated hereinbefore and said "Standard Provisions", those provisions stated hereinbefore prevail.

V. This Order includes the attached Monitoring and Reporting Program. If there is any conflict between provisions stated in the Monitoring and Reporting Program and the Standard Provisions, those provisions stated in the Monitoring and Reporting Program prevail.

W. This Order will be reopened to include definitions of "odors of sewage origin" with respect to IV (General Requirements) J. on page 11.

VI. RESCISSION

Except for enforcement purposes, Order No. 94-113, adopted by this Board on October 31, 1994, is hereby rescinded.

I, Dennis A. Dickerson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on March 29, 2001.

Dennis A. Dickerson
Executive Officer

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. R4-2011-0033 AMENDING ORDER NO. R4-2003-0025
(File No. 02-159)

WATER RECYCLING REQUIREMENTS AND
WASTEWATER DISCHARGE REQUIREMENTS
FOR
CITY OF LOS ANGELES
HARBOR WATER RECYCLING PROJECT – NONPOTABLE REUSE PROJECT

The California Regional Water Quality Control Board, Los Angeles Region, (Regional Board), finds:

1. The City of Los Angeles (City) proposes to produce and distribute reverse osmosis (RO) treated recycled water from its Harbor Water Recycling Project (HWRP) for nonpotable applications - irrigation, industrial, and recreational. This Nonpotable Reuse Program is one of the two programs under the Harbor Water Recycling Project (HWRP). The other is injection of recycled water into the Dominguez Gap Barrier Project (Barrier Project) that will be regulated under separate water recycling requirements. The HWRP programs are being undertaken by the City to comply with Regional Board Resolution No. 94-009 (discussed in Finding 7) to ultimately phase out discharge of wastewater into the Los Angeles Harbor.

   Tertiary treated effluent from TITP will undergo further treatment at the HWRP's an advanced wastewater treatment facility (AWTF) that is reverse osmosis system. In addition, HWRP also includes a pump station at TITP, and a transmission system to convey the recycled water to users in the Los Angeles Harbor area. Currently, the TITP/HWRP facilities and layout, in particular the chlorine disinfection and transmission systems, are such that the City can only distribute recycled water treated through reverse osmosis. Initially, HWRP will produce about 5 mgd of RO-treated recycled water. In the future, if the City would distribute for reuse tertiary treated wastewater, additional disinfection and transmission facilities would have to be constructed.

2. The City of Los Angeles Department of Public Works through its Bureau of Sanitation owns and operates the TITP. The City of Los Angeles Department of Water and Power (LADWP) owns the HWRP, but the Bureau of Sanitation operates the facilities. LADWP is the purveyor of recycled water produced at HWRP's AWTP. Therefore, both the Bureau of Sanitation and LADWP are the Recyclers and are individually and collectively responsible for compliance with the requirements in this Order.

PURPOSE OF ORDER

3. On July 9, 1997, LADWP submitted a report of waste discharge (ROWD) and applied for water recycling requirements, pursuant to California Water Code Section 13522.5, for the nonpotable reuse of RO-treated recycled water. On June 20, 2002, the LADWP, as requested by this Regional Board, filed an updated ROWD.

4. This Order is a master water recycling permit issued to the City of Los Angeles, specifically to LADWP and the Bureau of Sanitation, pursuant to California Water Code Section 13523.1. This Order prescribes the Recyclers responsibilities for the production, distribution and application of recycled water. The Recyclers are also responsible for processing individual end-users' applications, inspecting point-of-use facilities, and ensuring end-users' compliance with the water recycling requirements contained in this Order. The actual delivery of recycled water to end-users is subject to approval by the State Department of Health Services (hereinafter DHS), and/or its delegated local health agency.

TERMINAL ISLAND TREATMENT PLANT

5. TITP is a publicly owned treatment work (POTW) located at 445 Ferry Street, San Pedro, California, approximately 20 miles south of downtown Los Angeles (see Figure 1 for vicinity map). It was built in 1935 with a treatment process comprised of preliminary treatment and primary treatment with the effluent discharged into the Los Angeles Harbor. TITP was upgraded to secondary treatment employing the activated sludge process in 1977, and further upgraded to tertiary treatment in 1996. TITP has an average dry weather design treatment capacity of 30 mgd and peak design flow capacity of 50 mgd. For the last five years (1997 to 2001), sewage flow to the plant averaged approximately 17 mgd. The plant discharge of tertiary treated municipal wastewater to the Los Angeles Outer Harbor averaged approximately 16 mgd for the same period.

6. Discharge to the Harbor has been regulated under the National Pollutant Discharge Elimination System (NPDES) Permit No. CA0053856 issued by this Regional Board. It is also subject to the State Water Resources Control Board's Enclosed Bays and Estuaries Policy established in 1974. The policy requires POTW discharges to enclosed bays and estuaries to cease at the earliest practicable date. In 1977, this Regional Board ordered the City of Los Angeles to phase out the TITP discharge to the Harbor at the earliest practicable date or demonstrate that the discharge enhances the quality of the receiving water. The City of Los Angeles opted for the latter approach but was not successful in demonstrating that the TITP effluent enhances the water quality in the Harbor. Therefore in 1977, this Regional Board issued Order No. 85-77 requiring the City of Los Angeles to cease the TITP discharge to the Harbor at the earliest practicable date.

7. On October 31, 1994, this Regional Board adopted Resolution No. 94-009, which approved the implementation of water recycling as a means to phase out the TITP discharge to the Los Angeles Harbor. The City of Los Angeles agreed to initiate recycling secondary effluent for delivery of 5 mgd of recycled water to LADWP's Harbor Generating Station and the Barrier Project by December 1999 (Phase I), and adopt the goals of doubling the reuse of effluent 6 years after the start of Phase I (Phase II), and achieve total reuse by the year 2020 (Phase III).

8. TITP is located within the Los Angeles Coastal Plain, and the proposed recycled water use areas are within the West Coast Groundwater Basin, which is a part of the Los Angeles Coastal Groundwater Basin.

HARBOR WATER RECYCLING PROJECT (HWRP)

9. To implement Regional Board Resolution No. 94-009, the City of Los Angeles has been constructing the HWRP in phases with the ultimate goal of producing 22.5 mgd recycled water for reuse in the Barrier Project and other applications, including irrigation, industrial, and recreational. Table 1 presents the proposed quantity of recycled water to be produced for each phase.

Table 1 – Projected Recycled Water Production Capacity	
Phase	Product Recycled Water (mgd)
I	5.0
II	12.0
III	22.5

For the Phase I recycled water, LADWP has identified the following two users:

Table 2 – Usage of Recycled Water (mgd)		
User	Average	Maximum
Dominguez Gap Barrier Project (groundwater Injection)	2.2	4.0
Harbor Generating Station (boiler make-up water)	---	0.4

The use of recycled water will replace imported potable water. The Recyclers are actively pursuing additional users for Phase I. Any additional recycled water produced in future phases may be used for various irrigation, industrial uses, and recreational impoundments.

SOURCE, TREATMENT, AND TRANSMISSION OF RECYCLED WATER

10. TITP treats wastewater from industrial, commercial and residential sources located in Terminal Island, San Pedro, Wilmington, and portions of Harbor City. Approximately 60 percent of wastewater come from industrial/commercial sources, and the remaining 40 percent from residential sources. In compliance with 40 Code of Federal Regulations Part 403 and the NPDES permits for TITP and other POTWs owned and operated by the City of Los Angeles, the City of Los Angeles developed, and has been implementing, a Pretreatment Program. Two of the four primary objectives of the Program are to prevent to pass through of pollutants or to cause interference in the operation of the POTWs by regulating the discharge of toxic pollutants into the POTWs. The program reduces the likelihood of toxic contamination of the effluent and provides reliability in the treatment process.

11. Treatment at TITP consists of preliminary, primary, secondary, and tertiary treatment. Figure 2 depicts the flow diagram of the TITP treatment process. Preliminary treatment at the headworks removes coarse particles and debris from the wastewater. The primary settling tanks remove the majority of the organic and inorganic suspended solids. Secondary treatment uses the activated sludge process and consists of aeration basins where most of the total organic carbon is removed by microorganisms, followed by

clarifiers that remove most of the microorganisms and suspended inorganic solids. Tertiary treatment consists of coagulation and filtration in conventional, deep bed, tri-media (anthracite, sand and gravel) gravity filters. Tertiary treatment reduces settleable solids, suspended solids, turbidity and organic chemicals in the wastewater.

Sludge removed from primary and secondary treatments are pumped to the solids handling facility that includes air flotation, sludge blending, anaerobic digesters, centrifuges and sludge drying beds. Coarse solids and debris removed from preliminary treatment and dried sludge are hauled to a landfill that is permitted to accept such wastes, or the latter is beneficially reused in a manner that does not impact water quality.

12. For HWRP-Phase I, approximately 7.4 mgd of tertiary-treated effluent will be pumped to the AWTF. The remaining tertiary treated effluent will continue to be discharged to the Los Angeles Harbor. Figure 3 depicts the schematic of the tertiary treatment and Phase I AWTF treatment process. The AWTF is comprised of the following:

    A. Microfiltration (MF): MF will be used to pretreat the tertiary effluent prior to RO for increased system reliability and reduced RO membrane fouling. The tertiary treated effluent will be fed into automatic, self-cleaning, 500-micron strainers and then the flow will be split into two parallel trains. Each train contains 5 parallel Memcor MF units. The MF units will be periodically back washed to clean the membranes. The backwash will be sent back to TITP's headworks for reprocessing.

    B. Reverse Osmosis: The MF filtrate will be fed into two separate RO process trains that use thin film membranes. Each RO process train will have two stages in series to achieve a guaranteed recovery rate of 80 percent with a rated operating recovery of 85 percent. The brine from the first stage is used as feed water for the second stage. The RO will remove salts, minerals, metal ions, organic compounds, and microorganisms. The RO brine will be dechlorinated and discharged through TITP's existing outfall in accordance with NPDES permit No. CA0053856, and Resolution No. 94-009.

    C. Lime Stabilization: recycled water from the RO trains will be combined and lime will be added to adjust the pH and reduce the potential for minerals to be leached from the cement lining used in the transmission pipeline, which would affect the integrity of the pipe lining.

    D. Disinfection: Sodium hypochlorite will be used for disinfection in a chlorine contact basin designed to provide a concentration-time value of 450 mg-minutes per liter with a modal contact time of at least 90 minutes, based on a design flow of 5 mgd.

13. A recycled water pump station, equipped with three pumps with constant speed drivers, has been built for the HWRP-Phase I. The pump station is designed to pump 5 mgd with two pumps operating and the other pump on stand-by. Additional recycled water pumps will be installed for future HWRP Phases II and III.

14. The HWRP-Phase I recycled water transmission pipeline consists of approximately 18,000 linear feet of 36-inch and 24-inch diameter ductile iron and steel pipeline. Figure 4 depicts the pipeline alignment. All HWRP pipelines and valves, except for the portion of the pipeline installed underwater within the Los Angeles Harbor, are installed with purple

identification tapes or purple polyethylene vinyl wraps according to "Guidelines for Distribution of Nonpotable Water - American Water Works Association (AWWA) California-Nevada Section" published in 1992. The transmission system will be expanded to convey 22.5 mgd for future HWRP Phase III.

APPLICABLE PLANS, POLICIES AND REGULATIONS

15. ***Basin Plan*** **-** The Regional Board adopted a revised *Water Quality Control Plan for the Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) on June 13, 1994, and amended by various Regional Board resolutions. This updated and consolidated plan represents the Board's master quality control planning document and regulations. The Basin Plan (i) designates beneficial uses for surface and groundwater, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and conform to the State's antidegradation policy, and (iii) includes implementation provisions, programs, and policies to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. This Order implements the plans, policies, and provisions of the Board's Basin Plan.

16. The beneficial uses of the West Coast Groundwater Basin are municipal and domestic supply, industrial process supply, industrial service supply, and agricultural supply.

17. Section 13523 of the California Water Code provides that a regional board, after consulting with and receiving recommendations from DHS or its delegated local health agency, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe water recycling requirements for water that is used or proposed to be used as recycled water. Section 13523 further provides that the recycling requirements shall include, or be in conformance with, the statewide water recycling criteria established by DHS pursuant to Water Code Section 13521.

18. Besides using recycled water for groundwater injection and as boiler make-up water, the Recyclers also proposes to use recycled water for irrigation in parks, golf courses, freeway landscapes, school yards, cemeteries, other landscape or agricultural areas, other industrial uses, and recreational impoundments. All these reuse applications could affect the health, safety, and welfare of the public; therefore requirements are necessary.

19. Pursuant to the California Water Code Section 13523, the Regional Board has consulted with the DHS regarding the proposed recycling project and has incorporated their recommendations in this Order.

20. DHS adopted revised Water Recycling Criteria (Chapter 3, Division 4, Title 22, California Code of Regulations) that became effective on December 2, 2000. Applicable criteria to this recycling project are prescribed in this Order. HWRP's recycled water treated through reverse osmosis and disinfected exceeds the quality of recycled water required for the applications proposed in this Order. HWRP's recycled water treated through reverse osmosis and disinfected exceeds the quality of recycled water required for the applications proposed in this Order. In a letter dated September 30, 2009, California Department of Public Health (formerly DHS) finds that recycled water for street sweeping in the area

covered by Harbor Water Recycling Project – Nonpotable Reuse Project Order No. R4-2003-0025 is an approved use under Water Recycling Criteria, and recommends that the Regional Board approve such use and add this use to the list of approved uses in the Order No. R4-2003-0025. Additionally, in a letter dated August 10, 2010, California Department of Public Health finds that recycled water for dust control at permanent facilities is an appropriate and safe use, and recommends that the Regional Board approve such use.

21. The Recyclers had prepared an engineering report on its proposed production, distribution, and use of recycled water for irrigation in May 1998 as required by Section 60323 of Title 22, California Code of Regulations. On May 14, 2001, the DHS approved the engineering report and provided the Regional Board with comments and recommendations on the Recyclers' recycling project.

22. The requirements contained in this Order are in conformance with the goals and objectives of the Basin Plan and implement the requirements of the California Water Code and Water Recycling Criteria.

23. The Recyclers prepared and certified the following documents in compliance with the California Environmental Quality Act (Public Resources Code Section 21000, et seq.):

    A. "Final Environmental Impact Report and Addendum for Effluent Management Project at Terminal Island Treatment Plant", State Clearinghouse No. 93021016, prepared by Engineering Science for the City of Los Angeles Department of Public Works, September 1993, certified by the City Council on July 19, 1994. The project consists of upgrades to the TITP to achieve water recycling and construction of a backbone recycled water distribution system.

    B. "Final Mitigated Negative Declaration for Terminal Island Treatment Plant Advanced Wastewater Treatment Facility, Phase 1 (a.k.a. Harbor Water Recycling Project)" certified by the City Council on January 22, 1999. Certification was based on "Initial Study and Mitigated Negative Declaration", W.O. E2001594, prepared by the City of Los Angeles Bureau of Engineering and LADWP, September 1998. The project consists of development of the AWTF, Phase 1 production of 5 mgd RO water, and pipeline network to distribute RO water for direct injection to the Barrier and other consumers.

24. In addition to the CEQA documents outlined in Finding No. 18, the City of Los Angeles Bureau of Engineering prepared the "Final Environmental Assessment for Terminal Island Treatment Plant Advanced Wastewater Treatment Facility, Phase 1 (a.k.a. Harbor Water Recycling Project)", W.O. E2001594, August 9, 1999, for the Bureau of Reclamation, U.S. Department of the Interior. Based on this document, the Bureau of Reclamation issued "Finding of No Significant Impact", FONSI No. LC-99-1, dated September 1, 1999, for the project.

25. This issuance of water recycling requirements by a regulatory agency for the protection of the environment is exempt from the provisions of Chapter 3 [commencing with Section 21100, et seq., Division 13 (California Environmental Quality Act), Public Resources Code] in accordance with Section 15308, Title 14, California Code of Regulations.

26. Pursuant to California Water Code Section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to the State Water Resources Control Board, 1001 I Street, Sacramento, California, 95814, within 30 days of adoption of the Order.

The Regional Board has notified the City of Los Angeles and interested agencies and persons of its intent to issue Master Water Recycling Requirements for the production, distribution and use of recycled water, and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to these water recycling requirements.

IT IS HEREBY ORDERED that the City of Los Angeles Department of Water and Power shall comply with the following:

I. AWTF INFLUENT SPECIFICATIONS

For purposes of this Order, the AWTF includes microfiltration, reverse osmosis, lime stabilization, and chlorination. The influent to the AWTF is tertiary treated effluent.

The influent shall, at all times, be adequately oxidized. The influent shall be considered adequately oxidized when it meets the following characteristics:

1. The monthly average Biochemical Oxygen Demand value (BOD_5 20^0C) does not exceed 15 mg/L. Compliance shall be determined monthly using the average of the analytical results of all 24-hour composite samples taken at least weekly during the month.

2. The monthly average Total Suspended Solids (TSS) concentration does not exceed 15 mg/L. Compliance shall be determined monthly using the average of the analytical results of all 24-hour composite samples taken daily during the month.

3. The Total Organic Carbon (TOC) concentration does not exceed 16 mg/L for more than two consecutive days, based on 24-hour composite samples taken daily.

II. RECYCLED WATER LIMITATIONS

1. The disinfected RO treated recycled water shall not contain constituents with concentrations in excess of the following limits:

Constituent	Units	Monthly Average	Daily Maximum
Oil and grease	mg/L	10	15
Total dissolved solids	mg/L		800
Chloride	mg/L		250
Sulfate	mg/L		250
Boron	mg/L		1.5
Total nitrogen*	mg/L		10

Total nitrogen is sum of nitrite-N, nitrate-N, NH_3-N, and organic-N.

2. The turbidity of the reverse osmosis product water prior to disinfection shall not exceed 0.2 NTU more than 5 percent of the time within a 24-hour period and 0.5 at NTU at any time. The turbidity shall be continuously measured with at least one reading every 4 hours and recorded. When the turbidity requirements are exceeded, delivery of recycled water shall be suspended until such time the cause of the exceedance has been identified and corrected. The Recyclers shall notify and submit a report according to Provision VII.8. of this Order.

3. Chlorine disinfection shall provide a concentration-time (CT) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on a design flow of 5 mgd. The CT is the product of total chlorine residual and modal contact time measured at the same period. The modal contact time is the amount of time that elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance of the chlorination chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber.

   A. For purposes of calculating and demonstrating compliance with the CT requirement, the Recyclers conducted tracer studies under flow rates of 2.5 mgd and 5.0 mgd to determine the respective modal contact time at the chlorine contact basin. The studies followed the protocol outlined in *Tracer Studies in Water Treatment Facilities: A Protocol and Case Studies* published by the American Water Works Association Research Foundation, 1996. The Regional Board received a final report on the tracer studies on October 18, 2002. The report indicated modal contact times of 300 and 150 minutes for flows of 2.5 and 5 mgd, respectively.

   B. In the event the RO operation is changed to produce recycled water at flow rates other than 2.5 and 5 mgd, tracer studies shall be conducted to develop a curve for use in estimating the contact times at various flow rates.

4. Recycled water shall be, at all times, adequately disinfected such that the number of total coliform bacteria shall not exceed any of the following, based on daily grab samples:

   A. A 7-day median of 2.2 most probable number (MPN) per 100 milliliters. In the event of failure to meet the 7-day median coliform requirement for two consecutive days, the Recyclers shall suspend delivery of recycled water until such time the cause of the failure has been identified and corrected.

   B. 23 MPN per 100 milliliters in any sample prior to delivery of recycled water. In the event of failure to meet this requirement, the Recyclers shall suspend delivery of recycled water until such time the cause of the failure has been identified and corrected.

5. The pH of the recycled water shall be, at all times, within the range of 6.5 to 8.5 pH units. Excursions from this range shall not be considered a violation provided the duration is not more than 10 minutes in a 24-hour period, and the pH shall at all times be within 6 to 9.

6. The recycled water shall not contain trace, toxic and other constituents in concentrations exceeding the applicable maximum contaminant or action levels for drinking water established by the DHS in Sections 64431 and 64444, Chapter 15, Section 64533, Chapter 15.5 of Title 22 of the California Code of Regulations, or at levels that adversely affect the beneficial uses of receiving groundwater.

7. The radioactivity of the recycled water shall not exceed the limits specified in Sections 64441 and 64443, Article 5, Chapter 15, Title 22 of the California Code of Regulations, or subsequent revisions.

8. The recycled water shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect the beneficial uses of the receiving groundwater.

9. The recycled water shall not cause a measurable increase in organic chemical contaminants in the groundwater.

III. SPECIFICATIONS FOR USE OF RECYCLED WATER

1. The disinfected RO treated recycled water may be used for the following:

   A. Surface irrigation in the following areas:

      a. Food crops, including all edible root crops, where the recycled water comes into contact with the edible portion of the crop;

      b. Parks and playgrounds;

      c. School yards;

      d. Residential and freeway landscaping;

      e. Unrestricted access golf courses; and

      f. Other allowable irrigation applications specified in the Water Recycling Criteria, Chapter 3, Title 22, CCR, provided approval from DHS and Regional Board Executive Officer are obtained prior to delivery.

   B. Industrial or commercial cooling tower;

   C. Street sweeping;

   D. Dust control;

      Recycled water for dust control may be used at permanent facilities, which include but are not limited to horse ranches, open fields, and fairgrounds.

   E. Industrial boiler feed, and;

   F. Recreational Impoundments.

2. The recycled water shall not be used other than those specified in section III.1 unless an engineering report has been submitted to and approved by the DHS for such other uses and/or requirements for these uses have been prescribed by this Regional Board, in accordance with Section 13523 of the California Water Code. Any additionally approved recycled water applications to this permit can be approved by the Executive Officer of this Regional Board.

3. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.

4. The delivery of recycled water to end-users shall be subject to DHS approval and/or its delegated local agency.

IV. USE AREA REQUIREMENTS

Use area is an area of recycled water use with defined boundaries, which may contain one or more facilities where recycled water is used.

The Recyclers shall be responsible to ensure that all users of recycled water comply with the following:

1. All use areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK". Each sign shall display an international symbol similar to that shown in Figure 5 to alert people who do not read English.

2. No physical connection shall be made or allowed to exist between any recycled water piping and any piping conveying potable water, except as allowed under Section 7604 of Title 17, California Code of Regulations.

3. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibbs. Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access.

4. Recycled water use shall not result in earth movement in geologically unstable areas.

5. No impoundment of disinfected recycled water shall occur within 100 feet of any domestic water wells, potable water reservoirs, and streams used as sources of water supply.

6. Whenever a cooling system, using recycled water in conjunction with an air conditioning facility, utilizes a cooling tower or otherwise creates a mist that could come into contact with employees or members of the public, the cooling system shall comply with the following:

   A. A drift eliminator shall be used whenever the cooling system is in operation.

B. A chlorine, or other, biocide shall be used to treat the cooling system recirculating water to minimize the growth of *Legionella* and other microorganisms.

7. No irrigation areas with recycled water shall be located within 50 feet of any domestic water supply well unless all of the following conditions have been met:

   A. A geological investigation demonstrates that an aquitard exists at the well between the uppermost aquifer being drawn from and the ground surface;

   B. The well contains an annular seal that extends from the surface into the aquitard;

   C. The well is housed to prevent any recycled water spray from coming into contact with the wellhead facilities;

   D. The ground surface immediately around the wellhead is contoured to allow surface water to drain away from the well; and,

   E. The owner of the well approves of the elimination of the buffer zone requirement.

8. No irrigation shall take place within 50 feet of any reservoir or stream used as a source of domestic water.

9. Use of recycled water shall comply with the following:

   A. Recycled water shall be applied at such a rate and volume as not to exceed vegetative demand and soil moisture conditions. Special precautions must be taken to: prevent clogging of spray nozzles, prevent over-watering, and minimize the production of run-off. Pipelines shall be maintained so as to prevent leakage;

   B. Any irrigation runoff shall be confined to the recycled water use area and shall not be allowed to escape as surface flow, unless the runoff does not pose a public health threat and is authorized under a National Pollutant Discharge Elimination System (NPDES) permit issued by this Regional Board. For the purpose of this requirement, however, minor amounts of irrigation return water from peripheral areas shall not be considered a violation of this Order;

   C. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities, and shall not contact any drinking water fountain; and,

   D. Recycled water shall not be used for irrigation during periods of rainfall and/or run-off.

   E. Recycled water used for irrigation shall not be allowed to run off into recreational lakes unless it meets the criteria for such lakes.

   F. Recycled water used for street sweeping and dust control shall employ the Best Management Practices as described in Attachment 1. The vehicles to be

used for transporting recycled water for street sweeping shall be equipped with an air gap filling port for receiving potable or recycled water, or shall be equipped with two separate hoses, one for potable and one for recycled water, which shall be of different sizes to prevent cross connection of sources. In addition the spray heads and nozzles shall be configured and maintained to minimize runoff, ponding, and drift.

V. REQUIREMENTS FOR DUAL PLUMBED SYSTEM

1. The public water supply shall not be used as a backup or supplemental source of water for a dual-plumbed recycled water system unless the connection between the two systems is protected by an air gap separation that complies with the requirements of Section 7602 (a) and 7603 (a) of Title 17, California Code of Regulations.

2. The Recyclers shall not deliver recycled water for any internal use to any individually-owned residential units including free-standing structure, multiplexes, or condominiums.

3. The Recyclers shall not deliver recycled water for internal use, except for fire suppression system, to any facility that produces or processes food products or beverages.

4. The Recyclers shall not deliver recycled water to a facility using a dual plumbed system unless the report required under Section 13522.5 of the Water Code, which meets the requirements set forth in section IV.8 and/or IV.9., has been submitted to, and approved by, the Regional Board and DHS.

5. The Recyclers that shall submit to the DHS pursuant to Section 13522.5 of the Water Code shall contain the following information for dual plumbed systems, in addition to the information required by Section 60323 of Title 22 of the California Code of Regulations:

   A. A detailed description of the intended use site identifying the following:

      a. The number, location, and type of facilities within the use area proposing to use dual plumbed systems;

      b. The average number of persons estimated to be served by each facility on a daily basis;

      c. The specific boundaries of the proposed use site including a map showing the location of each facility to be served;

      d. The person or persons responsible for operation of the dual plumbed system at each facility; and

      e. The specific use to be made of the recycled water at each facility.

   B. Plans and specifications describing the following:

a. Proposed piping system to be used;

b. Pipe locations of both recycled and potable systems;

c. Type and location of the outlets and plumbing fixtures that will be accessible to the public; and

d. The methods and devices to be used to prevent backflow of recycled water into the public water system.

C. The methods to be used by the Recyclers to assure that the installation and operation of the dual plumbed system will not result in cross connections between the recycled water piping system and the potable water piping system. These shall include a description of pressure, dye or other test methods to be used to test the system every four years.

6. Prior to the initial operation of the dual-plumbed recycled water system and annually thereafter, the dual plumbed system within each facility and use site shall be inspected for possible cross connections with the potable water system. The recycled water system shall also be tested for possible cross connections at least once every four years. The testing shall be conducted in accordance with the method described in section III.5.c. above. The inspections and the testing shall be performed by a cross connection control specialist certified by the California-Nevada section of the American Water Works Association or an organization with equivalent certification requirements. A written report documenting the result of the inspection and testing for the prior year shall be submitted to the DHS within 30 days following completion of the inspection or testing.

7. The Recyclers shall notify the DHS of any incidence of backflow from the dual-plumbed recycled water system into the potable water system within 24 hours of discovery the incident.

8. Any backflow prevention device installed to protect the public water system serving the dual-plumbed recycled water system shall be inspected and maintained in accordance with Section 7605 of Title 17, California Code of Regulations.

VI. GENERAL REQUIREMENTS

1. Bypass, discharge, or delivery to the use area of inadequately treated wastewater, at any time, is prohibited.

2. The recycling facility shall be adequately protected from inundation and damage by storm flows and run-off.

3. Adequate freeboard and/or protection shall be maintained in the recycled water storage tanks and process tanks to ensure that direct rainfall will not cause overtopping.

4. The wastewater treatment and use of recycled water shall not cause pollution or nuisance.

5. The wastewater treatment and use of recycled water shall not result in problems caused by breeding of mosquitoes, gnats, midges, or other pests.

6. The use of recycled water shall not impart tastes, odors, color, foaming, or other objectionable characteristics to the receiving groundwater.

7. The use of recycled water, which could affect the receiving ground water, shall not contain any substance in concentration toxic to human, animal, or plant life.

8. Odors of sewage origin shall not be perceivable beyond the limits of the property owned or controlled by the Recyclers and/or recycled water user.

VII. PROVISIONS

1. This Order includes the attached "Standard Provisions Applicable to Waste Discharge Requirements". If there is any conflict between provisions stated hereinbefore and said "Standard Provisions", those provisions stated hereinbefore prevail.

2. This Order includes the attached Monitoring and Reporting Program. If there is any conflict between provisions stated in the Monitoring and Reporting Program and the Standard Provisions, those provisions stated in the Monitoring and Reporting Program prevail.

3. A copy of these requirements shall be maintained at the water recycling facility so as to be available at all times to operating personnel.

4. The Recyclers shall furnish each purveyor and user of recycled water a copy of these requirements and ensure that the requirements are maintained at the purveyor and user's facilities so as to be available at all times to operating personnel.

5. The Recyclers shall be responsible to ensure that all users of recycled water comply with the specifications and requirements for such use.

6. The Recyclers shall, at all times, properly operate and maintain all treatment facilities and control systems (and related appurtenances) that are installed or used by the Recyclers to achieve compliance with the conditions of this Order. Proper operation and maintenance includes: effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

7. The Recyclers shall submit to the Regional Board, for approval of the Executive Officer, within 90 days of adoption of this Order an operating and maintenance management plan, including a preventive (fail-safe) procedure and contingency plan for controlling accidental discharge and/or delivery to users of inadequately treated wastewater.

8. For any violation of requirements in this Order, the Recyclers shall notify DHS and the Regional Board within 24 hours of knowledge of the violation either by telephone or electronic mail. This notification shall be followed by a written report within 5

working days of notification, unless otherwise specified in this Order. The report shall include, but not limited to, the following information, as appropriate:

A. Nature and extent of the violation;

B. Date and time: when the violation started, when compliance was achieved; and, when delivery was suspended and restored, as applicable.

C. Duration of violation;

D. Cause/s of violation;

E. Corrective and/or remedial actions taken and/or will be taken with time schedule for implementation; and

F. Impact of the violation.

9. Supervisors and operators of the wastewater recycling facility shall possess a certificate of appropriate grade as specified in Title 23, California Code of Regulations, Section 3680 or subsequent revisions.

10. In accordance with Section 13522.5 of the California Water Code, and Title 22, Division 4, Chapter 3, Article 7, Section 60323 of the California Code of Regulations, the Recyclers shall file an engineering report, prepared by a properly qualified engineer registered in California, of any material change or proposed change in character, location or volume of the recycled water or its uses to the Regional Board and to the DHS.

11. For any extension or expansion of the recycled water system or use areas, the Recyclers shall submit a report detailing the extension or expansion plan for approval of the DHS. Following construction, as-built drawings shall be submitted to the DHS for approval prior to delivery of recycled water. The Executive Officer shall be furnished with as-built drawings and a copy of the DHS approval.

12. The Recyclers shall notify the Executive Officer, in writing, at least 30 days in advance of any proposed transfer of ownership and/or operation of the recycling facility and responsibility for complying with this Order. The notice shall include a written agreement between the existing and new recycled water producer indicating the specific date for the transfer of responsibility for compliance with this Order. The agreement shall include an acknowledgement that the Recyclers is liable for any violations that occurred up to the transfer date and the new recycled water producer is liable from the transfer date on.

13. The Recyclers shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

A. Enter upon the Recyclers' premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;

B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

D. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location.

14. The Recyclers must comply with all conditions of these water recycling requirements. Violations may result in enforcement actions, including Regional Board orders or court orders, requiring corrective action or imposing civil monetary liability, or in modification or revocation of these requirements.

15. These requirements do not exempt the Recyclers from compliance with any other laws, regulations, or ordinances that may be applicable; they do not legalize the recycling and use facilities; and they leave unaffected any further constraint on the use of recycled water at certain site/s that may be contained in other statutes or required by other agencies.

16. This Order does not alleviate the responsibility of the Recyclers to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency. Expansion of the recycling facility shall be contingent upon issuance of all necessary requirements and permits, including a conditional use permit.

17. The provisions of these water recycling requirements are severable. If any provision of these requirements is found invalid, the remainder of these requirements shall not be affected.

18. In an enforcement action, it shall not be a defense by the Recyclers that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the Recyclers shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

19. After notice and opportunity for a hearing, this Order may be modified, revoked and reissued, or terminated for cause, which include but is not limited to: failure to comply with any condition of in this Order; endangerment of human health or environment resulting from the permitted activities in this Order; obtaining this Order by misrepresentation or failure to disclose all relevant facts; acquisition of new information that could have justified the application of different conditions if known at the time of Order adoption.

The filing of a request by the Recyclers for modification, revocation and reissuance, or termination of the Order; or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

20. The Recyclers shall furnish, within a reasonable time, any information the Regional Board or the DHS may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Recyclers shall also furnish the Regional Board, upon request, with copies of records required to be kept under this Order.

VIII. EFFECTIVE DATE OF ORDER

This Order takes effect upon adoption.

I, Samuel Unger, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on February 3, 2011.

Samuel Unger

Samuel Unger, P.E.
Executive Officer

/DTSAI

Attachment 1

Other Uses of Recycled Water

Street Cleaning

Type of Reuse Proposed:	Street Cleaning Approved in Title 22 Section 60307 (b)(7)
Surrounding Land Uses:	Street sweeping on public streets and roadways Residential, Commercial, and Industrial
Entity Responsible for Distribution System:	Los Angeles Department of Water and Power
Other Entities with Regulatory Jurisdiction:	Los Angeles Water Quality Control Board California Department of Public Health (DPH) County Department of Public Health
Use Area Containment Measures:	Containment measures will be determined on a case by case basis in collaboration with the County DPH.
Street Cleaning User:	Los Angeles Harbor Department
Address:	500 Pier A St, Wilmington, CA
Recycled Water Usage:	0.86 acre-feet per year

Street Cleaning Operations:

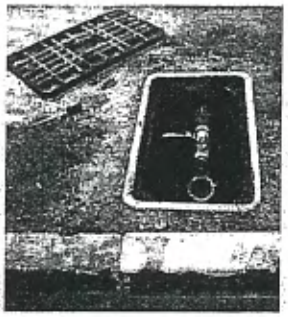

Figure 1 – Typical Filling Station

The City of Los Angeles Harbor Department has established a street cleaning program that will utilize recycled water in place of potable water. Street sweeping trucks will be retrofitted for use with recycled water in order to perform these operations. The Harbor Department will utilize a recycled water filling station located at the Terminal Island Treatment Plant to fill the sweepers with recycled water for the cleaning operations. This filling station will be installed with fittings of a size unique to the recycled water lines and that differ in size from standard potable fittings for sweeper trucks. The street sweeper trucks will be fitted with two sets of filler pipes that will be color coded, purple for recycled water and blue for potable water. Air gaps will be present to prevent cross contamination of the two systems. See Figure 1 for a typical example of the new filling stations that will be utilized for the street cleaning operations. A listing of the new recycled water filling stations is contained in Table 1.

Table 1 Filling Station Identification and Location	
Filling Station Identification	Filling Station Location
Terminal Island Treatment Plant	445 Ferry Street, Los Angeles

Additional filling stations will be installed in the future as the Los Angeles Department of Water and Power extends the recycled water distribution system in the Harbor area. This expanded distribution system will include recycled water fire hydrants which will eventually be used for refilling the sweeper trucks in the field.

Figure 2 – Typical Street Sweeper

Water use in the street cleaning operations will be minimized to the extent practicable to affect the street cleaning, but minimize any residual water that will be left on the street surfaces. Street sweepers utilize a system of nozzles to apply the water to the street surface in order to control dust in conjunction with a rotating brush for cleaning. The rotating brushes then push the accumulated material into a holding tank for disposal. This process of spray application and subsequent sweeping of the material and water leaves behind only a minimal amount of water on the street surface. This water is quickly evaporated from the street surface leaving no opportunity for large pools of recycled water to form on the street surface or pose a threat to the general public.

Figure 3 – The results of Street Sweeping

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. 91-101

WATER RECLAMATION REQUIREMENTS
FOR
CITY OF BURBANK
DEPARTMENT OF PUBLIC WORKS
(FILE NO. 83-25)

The California Regional Water Quality Control Board, Los Angeles Region, finds:

1. City of Burbank, Public Works Department reclaims water from its Water Reclamation Plant under Order No. 86-95 (File No. 83-25) adopted by this Board on November 24, 1986.

2. City of Burbank, Public Works Department has filed a report of material change to expand use of reclaimed water.

3. City of Burbank, Public Works Department (Reclaimer) operates a Water Reclamation Plant at 2 West Chestnut Street, Burbank, California, and currently supplies reclaimed water to the California Department of Transportation. The City proposed to expand water supply to others:

   (1) California Department of Transportation - for irrigation along the Golden State Freeway between Western Avenue and Hollywood Way on an area of about 32 acres. Estimated usage is 21.2 million gallons per year.

   (2) Alexander Haagen Company - for the proposed Media City Mall (Burbank Gateway Center, 10 acres) landscape irrigation, bounded by Magnolia Boulevard, First Street, Burbank Boulevard, and Third Street. Estimated usage is 16.3 million gallons per year.

Attachment F

Engineering Report

Use of Recycled Water for Street Cleaning

Water Resources Division – Water Recycling
Bureau of Street Services

Revised August 2010

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1.0 EXECUTIVE SUMMARY

This Engineering report has been prepared to provide information on the collaborative efforts made by the City of Los Angeles Department of Water and Power (LADWP) and the City's Bureau of Street Services (BSS) to implement the use of Disinfected Tertiary treated recycled water for street cleaning. Disinfected Tertiary treated recycled water for street cleaning is approved under Title 22, Section 60307(b)(7) of the California Code of Regulations.

LADWP has proposed installing eight (8) recycled water fill stations that have good potential (and safe access) for use by the Bureau of Sanitation (BOS), BSS and City contractors. Currently, BSS has indicated that two of the eight fill stations could be utilized by eleven (11) sweeper trucks, and it is expected that more use can be generated in the future.

Sweepers discharging recycled water are required to be retrofitted to meet Department of Public Health (DPH) standards. DPH inspector will inspect and approve the conversions prior to the sweepers being filled with recycled water. BSS would prefer that the first retrofit to be done by General Service Division – Fleet maintenance. Subsequent sweepers' retrofits will then be replicated by LADWP personnel. The cost of materials for retrofitting is estimated to be less than $1,000 per sweeper.

LADWP and BSS have also identified two BSS facility yards which will be in close proximity to recycled water mainline in the future. Extending the recycled water line to these yards is being considered at this time. In addition to the filling up the sweepers potential uses of recycled water within BSS facility include landscaping, truck-washing, nursery, etc.

LADWP's Water Recycling Regulatory Group is preparing Recycled Water User Guidelines which outline the allowed use, requirements for use, best management practices and health and safety guidelines. These guidelines along with additional training and education will be provided to the appropriate parties in BSS.

MILESTONES	COMPLETION DATE (EST.)
Installation of the 8 Proposed Fill Stations*	November 2010
Extension of Recycled Water pipe to BSS Yard - 452 N. San Fernando Rd, LA	August 2011
Extension of Recycled Water pipe to BSS Yard - 10811 Chandler Blvd, N. Hollywood	July 2011
Retrofitting of the first truck by GSD – Fleet Maintenance	September 2010
Retrofitting of the remaining ten (10) Sweepers by LADWP personnel	December 2010
Training and education of BSS employees/staff	December 2010
Approval of county permits	December 2010

** Pending the installation of the 2.5" female NST x 3" male NST bushing.*

2.0 BACKGROUND

2.1 Title 22 Approved Usages

The City of Los Angeles produces recycled water at a high treatment level, Disinfected Tertiary RW. Title 22, Section 60307 (b) (7) of the California Code of Regulations approves the use of recycled water for street cleaning on public roads. The minimum treatment level required for cleaning roads, sidewalks, and outdoor work areas is Disinfected Secondary-23 RW[1]. See *Table 2.1-1 – Title 22 Allowed Uses of Recycled Water*.

LADWP Water Recycling
TITLE 22 ALLOWED* USES OF RECYCLED WATER

USE OF RECYCLED WATER	CCR Title 22 Section	TREATMENT LEVEL			
		Disinfected Tertiary RW	UNAVAILABLE IN LOS ANGELES – For Reference Only		
			Disinfected Secondary-2.2 RW	Disinfected Secondary-23 RW	Undisinfected Secondary RW
IRRIGATION OF					
Food crops: edible portion of crop in contact with RW	60304(a)(1)	Allowed	Not Allowed	Not Allowed	Not Allowed
Parks and Playgrounds	60304(a)(2)	Allowed	Not Allowed	Not Allowed	Not Allowed
School yards	60304(a)(3)	Allowed	Not Allowed	Not Allowed	Not Allowed
Residential landscaping	60304(a)(4)	Allowed	Not Allowed	Not Allowed	Not Allowed
Unrestricted access golf courses	60304(a)(5)	Allowed	Not Allowed	Not Allowed	Not Allowed
Any other irrigation uses not prohibited in CCR	60304(a)(6)	Allowed	Not Allowed	Not Allowed	Not Allowed
Food crops: edible portion not in contact with RW	60304(b)	Allowed	Allowed	Not Allowed	Not Allowed
Cemeteries	60304(c)(1)	Allowed	Allowed	Allowed	Not Allowed
Freeway landscaping	60304(c)(2)	Allowed	Allowed	Allowed	Not Allowed
Restricted access golf courses	60304(c)(3)	Allowed	Allowed	Allowed	Not Allowed
Ornamental nursery stock and sod farms	60304(c)(4)	Allowed	Allowed	Allowed	Not Allowed
Pasture for milk-producing animals	60304(c)(5)	Allowed	Allowed	Allowed	Not Allowed
Any non-edible vegetation with access control to prevent use as a park/playground/school yard	60304(c)(6)	Allowed	Allowed	Allowed	Not Allowed
Orchards: no contact between edible portion and RW	60304(d)(1)	Allowed	Allowed	Allowed	Allowed
Vineyards: no contact between edible portion and RW	60304(d)(2)	Allowed	Allowed	Allowed	Allowed
Non-food bearing trees not irrigated <14 days of harvest	60304(d)(3)	Allowed	Allowed	Allowed	Allowed
Fodder/fiber crops/pasture for animals not producing milk for human consumption	60304(d)(4)	Allowed	Allowed	Allowed	Allowed
Seed crops not eaten by humans	60304(d)(5)	Allowed	Allowed	Allowed	Allowed
Food crops that undergo commercial pathogen-destroying process before human consumption	60304(d)(6)	Allowed	Allowed	Allowed	Allowed
SUPPLY FOR IMPOUNDMENTS					
Non-restricted recreational impoundment** with monitoring for pathogenic organisms (including full-body contact)	60305(a)	Allowed**	Not Allowed	Not Allowed	Not Allowed
Restricted recreational impoundments	60305(d)	Allowed	Allowed	Not Allowed	Not Allowed
Fish hatchery impoundments with public access	60305(d)	Allowed	Allowed	Not Allowed	Not Allowed
Landscape impoundments w/out decorative fountains	60305(e)	Allowed	Allowed	Allowed	Not Allowed
SUPPLY FOR COOLING OR AIR CONDITIONING					
Industrial/commercial cooling/AC with cooling towers, or evaporative condensers that create a mist	60306(a)	Allowed***	Not Allowed	Not Allowed	Not Allowed
Industrial/commercial cooling/AC without cooling towers, or evaporative condensers that create a mist	60306(b)	Allowed	Allowed	Not Allowed	Not Allowed
OTHER USES					
Flushing toilets or urinals	60307(a)(1)	Allowed	Not Allowed	Not Allowed	Not Allowed
Priming drain traps	60307(a)(2)	Allowed	Not Allowed	Not Allowed	Not Allowed
Industrial process water that may contact workers	60307(a)(3)	Allowed	Not Allowed	Not Allowed	Not Allowed
Structural fire fighting	60307(a)(4)	Allowed	Not Allowed	Not Allowed	Not Allowed
Decorative fountains	60307(a)(5)	Allowed	Not Allowed	Not Allowed	Not Allowed
Commercial laundries	60307(a)(6)	Allowed	Not Allowed	Not Allowed	Not Allowed
Backfill consolidation around potable water pipelines	60307(a)(7)	Allowed	Not Allowed	Not Allowed	Not Allowed
Artificial snow-making for commercial outdoor use	60307(a)(8)	Allowed	Not Allowed	Not Allowed	Not Allowed
Commercial car washes, including hand washing, if RW is not heated and not in contact with general public	60307(a)(9)	Allowed	Not Allowed	Not Allowed	Not Allowed
Industrial boiler feed	60307(b)(1)	Allowed	Allowed	Allowed	Not Allowed
Nonstructural fire fighting	60307(b)(2)	Allowed	Allowed	Allowed	Not Allowed
Backfill consolidation around non-potable piping	60307(b)(3)	Allowed	Allowed	Allowed	Not Allowed
Soil compaction	60307(b)(4)	Allowed	Allowed	Allowed	Not Allowed
Mixing concrete	60307(b)(5)	Allowed	Allowed	Allowed	Not Allowed
Dust control on roads and streets	60307(b)(6)	Allowed	Allowed	Allowed	Not Allowed
Cleaning roads, sidewalks, outdoor work areas	60307(b)(7)	Allowed	Allowed	Allowed	Not Allowed
Industrial process water not in contact with workers	60307(b)(8)	Allowed	Allowed	Allowed	Not Allowed
Flushing sanitary sewers	60307(c)	Allowed	Allowed	Allowed	Allowed
GROUNDWATER RECHARGE					
Spreading/percolation/injection of RW	60320(a)(1)	****			

* Refer to full text of California Code of Regulations, Title 22, Division 4 (Environmental Health), Article 3 (Water Recycling Criteria)
** *"Non-Restricted Impoundment"* per Title 22 Section 60301.620; with "conventional tertiary treatment", additional monitoring may be required
*** Drift eliminators and/or biocides are required if public employees can be exposed to mist
**** Requires site-specific DPH & Regional Board approval subject to public hearings, e.g. for aquifer replenishment/seawater intrusion barrier

Table 2.1-1 – Title 22 Allowed Uses of Recycled Water

[1] Hyperion produces recycled water treated to the Secondary level – Undisinfected Secondary RW.

2.2 Bureau of Street Services (BSS) - Street Cleaning Section

2.2.1 Introduction

The mission of the Bureau of Street Services (BSS) is to "*maintain all improved streets, alleys, and related throughways in a perpetually good to excellent condition while providing desirable standards of safety, appearance, and convenience to the residents and the traveling public within their jurisdiction*".[2]

The Street Maintenance Division is a component of Bureau of Street Services and it consists of two sections - the Street Maintenance Section and the Street Cleaning Section. The primary function of Street Cleaning Section is "the maintenance and cleaning of 6,500 miles of dedicated public thoroughfares (28,000 lane miles) and 800 miles of alleys in an area exceeding 466 square miles".

2.2.2 Existing Facilities/Yard

Street Cleaning Division is divided into four geographical areas. Within these areas are six Maintenance Districts that perform a wide variety of maintenance and cleaning functions citywide. *Figure 2.2.2-1* shows a more detail breakdown of each district and the locations of forty-five (45) existing BSS facility yards. Of the 45 facilities, there are currently eighteen (18) yards that have sweepers.

2.2.3 Street Sweeper Trucks

Presently, BSS utilizes 161 motor sweepers that are staffed by over 100 Motor Sweeper Operators. Operators go out daily to perform their scheduled routes. At the time of maintenance, back up sweepers are used to perform the citywide cleaning operations. BSS estimates that each sweeper truck has a capacity of 300 gallons and requires 3 fillings per day. The sweeper operators use local fire hydrants for subsequent fillings after the trucks depart the yard. The initial fill takes place at the home yard. *Table 2.2.3-1,* provided by BSS shows a detailed listing of all the sweeper models and their respective location.

2.2.4 Truck Schedule and Routes

There are 3 types of Route Classifications:
Restricted Parking Routes (posted)
There are 4,721 curb miles within the restricted (no-parking) route program where streets are posted with no parking signs that state the day and time of the week when the street are swept. A Sweeper on average, typically requires 2-3 hours of time to complete the specified route. These routes are cleaned weekly and average eight to ten miles in length.

[2] Acquired from City of LA Bureau of Street Services official website.

Open Routes

There are a total of 8,058 non-posted curb miles where parking is allowed on the street. Each route averages around 31 miles. Sweepers on this route maintain a four-week frequency. However, the frequency changes during heavy leaf fall season (October - February).

A.M. Routes

The A.M routes average about 40 miles per route for a total of 1,538 curb miles citywide. Cleaning on these begins around 3:00 am. These routes enable the sweeper to clean the street with minimal impact on businesses and rush hour traffic commuters.

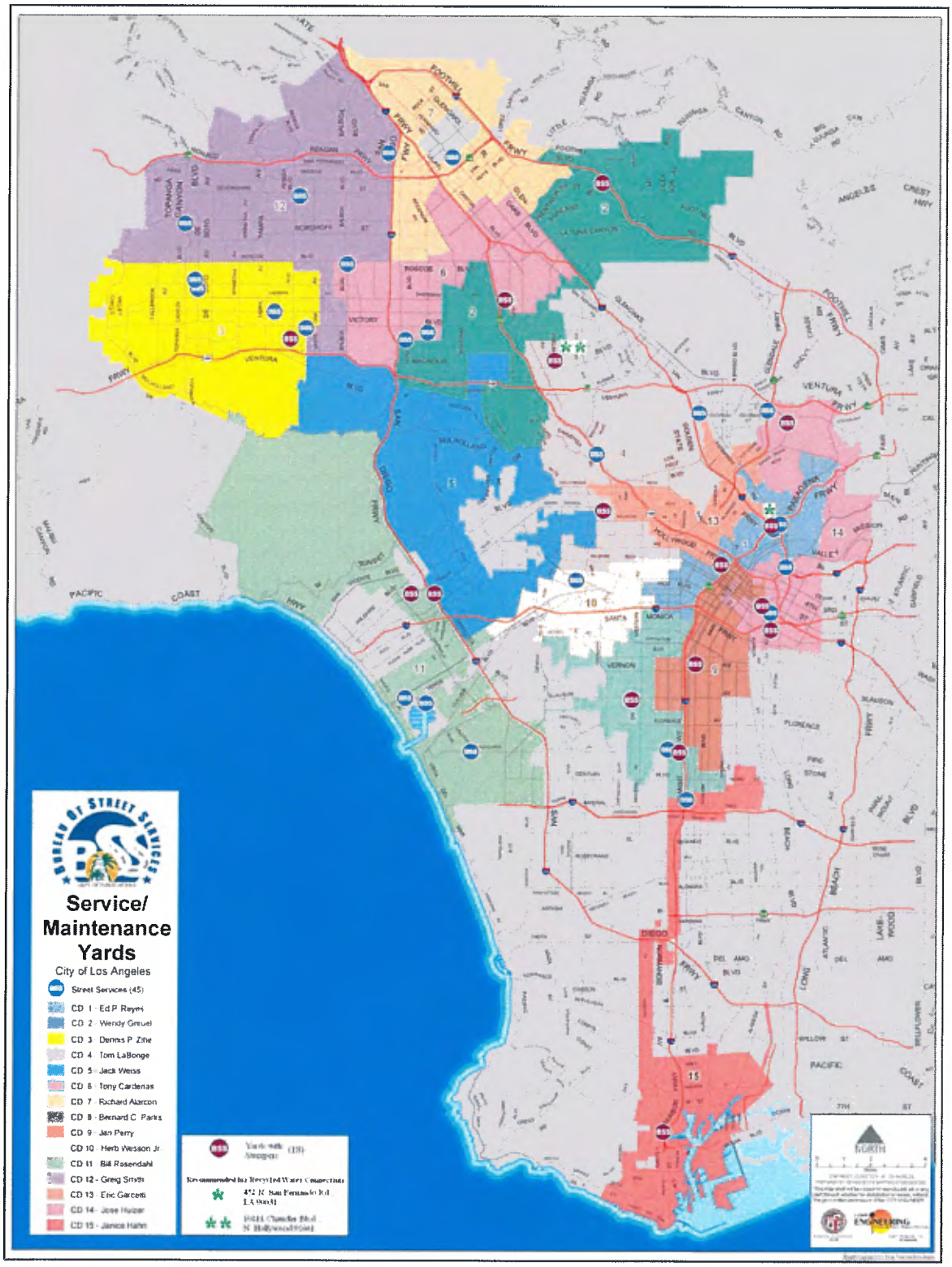


Figure 2.2.2-1 – Location of BSS Maintenance Yards

STREET MAINTENANCE DIVISION
Motor Sweeper Fleet

BAY HARBOR

DIV	101	102	103	136	139
EQUIPMENT NUMBER	24025 CNG-S	24875 Top Gun	24870 Top Gun	24010 CNG-S	24892 Top Gun
	24028 CNG-S	24883 Top Gun	24872 Top Gun	24034 CNG-S	24895 Top Gun
	24035 CNG-S	24884 Mobil Top	24873 Top Gun	24456 CNG-F	24907 Top Gun
	24038 CNG-S	24886 Top Gun	24902 Top Gun	24461 CNG-S	24923 DBB
	24460 CNG-S	24896 Top Gun	24920 DBB	24858 Top Gun	24924 DBB
	24916 Elgin Eagle	24927 DBB	24921 DBB	24866 Top Gun	24931 DBB
	* LN to SPD	24928 DBB	24925 DBB	24868 Top Gun	SALVAGE
		24836 Top Gun	24021 CNG-S	24919 DBB	24841 Top Gun
		*LN to 173	*LN to 177	24978 CNG-F	
		24926 DBB	SALVAGE	24983 CNG-F	
		*Train Accident	24819 Top Gun	24991 CNG-F	
				SALVAGE	
				24835 Top Gun	

NORTH CENTRAL

127	132	133	134	135	176
24489 CNG	24019 CNG-S	24017 CNG-S	24876 Athey	24237 Athey	24901 Athey
	24026 CNG-S	24029 CNG-S	24877 Athey	24238 Athey	
128	24897 Athey	24454 CNG-S	24880 Athey	24879 Athey	177
24984 CNG	24899 Athey	24465 CNG-S	24882 Athey	24893 Athey	24021 CNG-S
	24946 DBB	24878 Athey	24900 Athey	24894 Athey	24932 DBB
129	24985 CNG-F	24881 Athey	24914 DBB	24898 Athey	
[redacted] CNG-S	24034 CNG-S	24943 DBB	24922 DBB	24906 Athey	
	*LN to 136	24986 CNG-F	24929 DBB	24936 DBB	
131		24987 CNG-F	24930 DBB		
24031 CNG-S		24991 CNG-F	24937 DBB		
24045 CNG-S		*LN to 136	24939 DBB		
24458 CNG-S					
24944 DBB					
24963 CNG-F					

EAST VALLEY

DIV	214	219	231	213
EQUIPMENT NUMBER	24871 Athey	24039 CNG-S	24009 CNG-S	24867 Athey
	24904 Athey	24048 CNG-S	24013 CNG-S	24887 Athey
	24905 Athey	24457 CNG-S	24014 CNG-S	24890 Athey
	24908 Athey	24462 CNG-S	24018 CNG-S	24903 Athey
	24915 DBB	24981 BB	24040 CNG-S	SALVAGE
	24933 DBB	24989 BB	24041 CNG-S	24290 Athey
	SALVAGE	SALVAGE	24042 CNG-S	
	24248 Athey	24849 Athey	24452 CNG-S	
	24857 Athey	24869 Athey	24464 CNG-S	
			24913 DBB	
			24932 DBB	
			24938 DBB	
			24940 DBB	
			24942 DBB	
			24948 DBB	
			24979 BB	
			24980 BB	
			24990 BB	
			24453 FIRE	
			SALVAGE	
			24857 Athey	

WEST VALLEY

215	232
[redacted] CNG - S	[redacted] CNG-S
[redacted] CNG - S	[redacted] CNG - S
24953 DBB	[redacted] CNG - S
[redacted] BB	[redacted] CNG - S
	[redacted] CNG - S
	[redacted] CNG - S
	[redacted] CNG - S
	[redacted] CNG - S
	[redacted] CNG - S
	24885 Athey
	24910 Athey
	24934 DBB
	24935 DBB
	24941 DBB
	24945 DBB
	24947 DBB
	24952 DBB
	[redacted] BB
	[redacted] BB
	SALVAGE
	24909 Athey
	24918 CNG - E

PLANT I

164
24007 CNG-S
154
24027 BB
155
24961 DBB
156
24024 BB
159
24022 BB
Backup
24047 BB
24959 DBB
SALVAGE
24284 Athey
24286 Athey
24287 Athey
24288 Athey

PLANT II

254
24020 BB
255
24023 BB
256
24044 BB
266
24006 CNG-WF
279
24960 DBB
281
24954 Sm vac
SPARE
24282 Athey
24289 Athey
24917 EE
24962 DBB
SALVAGE
24283 Athey
24285 Athey

CNG-E = CNG Elgin FD = Freightliner Diesel
CNG-F = CNG Freightline BB = CNG Broom Bear
CNG-S = CNG Sterling DBB = Diesel Broom Bear
CNG-WF = CNG White Freightliner
WEB-TECH Wireless Device
Voyager Card Assigned

AREA	DIV	ADDRESS
BH	101	1400 N. Gaffey St. San Pedro 90731
	102	8602 Denver Av. LA 90037
	103	4206 S. Main St. LA 90003
	136	5860 S. Wilton Pl. LA 90003
	139	2000 Abbott Kinney Bl. Vencie 90018
NC	127, 129, 133	452 San Fernando Rd. LA 90031
	128, 132	6th St. LA 90021
	131	1274 W. 2nd St. LA 90031
	134	6640 Romaine St. LA 90038
	135	1274 Cochran Av. LA 90019
	176, 177	2231 Fair Park Av. LA 90041
EV	214	11165 Missouri Av. W.LA 90025
	219	9401 Wentworth St. Sunland 91040
	231	10811 Chandler Bl. N.Hollywood 91601
WV	213	1479 Stoner Av. WLA 90025
	215, 232	6015 Baird Av. Tarzana 91356
PLANT I - 164, 154, 155, 15		2484 E. Olympic, LA 90021
PLANT II - 254,255,256,266, 279,281		12256 Sherman Wy, NH 91605

Table 2.2.3-1 – Motor Sweeper fleet per BSS facility

3.0 IMPLEMENTATION

3.1 Overview

3.1.1 New Facilities

3.1.1.1 Fill Stations

Los Angeles Department of Water & Power (LADWP) has identified several specific sites to install fill stations that have good potential and safe access to recycled water. Some of the users of the fill station include Bureau of Sanitation for sewer flushing, Bureau of Street Services for sweepers and contractors who may use it for multiple purposes such as dust control or soil compaction. Some of these fill stations are in close proximity to the Bureau of Street Services (BSS) yards and are ideal places to refill sweepers. Sweepers utilizing these fill stations would need to be retrofitted to discharge recycled water. The fill stations are expected to be installed and ready for use by November 2010. The locations of the 8 fill stations are:

1. Cypress Park: 2630 Pepper St., Los Angeles 90065
Fill station is located 0.5 miles north of an existing BSS yard (452 N. San Fernando Rd.). There are about 7 sweepers which are within reasonable proximity to this site and would be able to use this fill station once per day, several times per week. Assuming 7 trucks fill 3 times per week, the water consumption at this fill station from sweepers is estimated to be 1.0 AFY. Fill Station is installed, however a 2.5" female NST x 3" male NST bushing needs to be installed per DPH requirements.

2. Branford/San Fernando: 9803 San Fernando Rd., Los Angeles 91331
Currently this fill station is out of the way for Sweepers to utilize. However, BSS will consider the location of this fill station when making any future route addition and/or revisions. Fill Station is ready for use, pending DPH approval. Fill station is installed and ready for use.

3. Playa Vista: 12001 Bluff Creek Dr. Los Angeles 90094
Currently this fill station is out of the way for Sweepers to utilize. However, BSS will consider the location of this fill station when making any future route addition and/or revisions. . Fill Station is installed, however a 2.5" female NST x 3" male NST bushing needs to be installed per DPH requirements.

4. Van Nuys Golf: 16280 Vanowen St., Los Angeles 91406
Currently this fill station is out of the way for Sweepers to utilize. However, BSS will consider the location of this fill station when making

any future route addition and/or revisions. Fill Station is installed and ready for use.

5. Woodley Golf: 6335 Woodley Ave., Los Angeles 91406
BSS estimates 4 sweepers which could use this fill station twice a week. Based on this, the water consumption is estimated to be 0.40 AFY. Fill Station is installed and ready for use.

6. Terminal Island: 455 Ferry St., San Pedro 90731
This fill station will be located inside the Terminal Island Treatment Plant and is going to be installed and operated by Bureau of Sanitation (BOS). BOS has agreed to allow sweepers use this fill station if they choose to do so. However, per BSS there are currently no sweepers which would be able to utilize this fill station. . Fill Station is installed, however a 2.5" female NST x 3" male NST bushing needs to be installed per DPH requirements.

7. Griffith Park: Zoo Dr. & Griffith Park Dr., Los Angeles 90027
Currently this fill station is out of the way for Sweepers to utilize. However, BSS will consider the location of this fill station when making any future route addition and/or revisions. . Fill Station is installed, however a 2.5" female NST x 3" male NST bushing needs to be installed per DPH requirements.

8. Valley Presbyterian: Bassett Street and Halbrent Ave, LA 91405
BSS is currently looking into determining the number of sweepers that could use this fill station. Fill Station is installed, however a 2.5" female NST x 3" male NST bushing needs to be installed per DPH requirements.

In addition to these eight, LADWP plans on installing additional fill stations as we expand the Recycled Water distribution system. LADWP and BSS will work together to determine the location of new fill stations.

3.1.1.2 Connections
For new installations tapping on to existing laterals, a below-ground-access controlled vault and meter application is being proposed (*Figure 3.1.1.2-1)*. Fill stations have been ordered with a 3" MHT outlet fitting. Although this is not your typical fire hose connection size (2.5" or 4"), it will prevent the user from inadvertently connecting to the fill station for potable uses.

Figure 3.1.1.2-1 – Below ground connection

3.1.1.3 Security

Clamshell locks have been installed inside the vault on the globe valve. LADWP will provide the BSS facilities with keys to these locks. Providing the keys to the sweeper operators would be the responsibility of the BSS facility.

3.1.1.4 Mobile Water Tanker

BSS proposed employing mobile water tankers to refill the sweepers. Mobile Water Tankers would be most beneficial to sweepers that have no fill stations along their route. These tankers would refill at the proposed fill stations and then meet the sweepers along their route. Presently, BSS cannot accommodate the cost Mobile Water Tankers & operators into their budget. However, BSS is considering how to incorporate this in its future plans along with its future purchases of new fleet vehicles.

3.1.2 Retrofitting Existing Facilities

3.1.2.1 BSS Maintenance Yards

Table 3.1.2.1-1 shows all the BSS yard locations that use Sweepers and their estimated daily water use based on the number of trucks they discharge. The table also includes the closest location to an existing recycled water line, if the yard were to switch to recycled water. In addition a description of the locations of the eight recently ordered fill stations have been included in relation to the closest yard.
Based on preliminary analysis, LADWP Water Recycling is recommending providing recycled water to two BSS facilities:

1. 452 San Fernando Rd. LA 90031

Yard deploys 12 sweepers daily; water usage is estimated to be 10 AFY. Currently LADWP is planning to connect Angelica Textile Services (451 San Fernando Rd) to recycled water which is located directly across the

street from the Yard *(Figure 3.1.2.1-1)*. There is a 16" line which serves Cypress Park, and it could be extended to serve the BSS yard and Angelica Textile services along San Fernando Road. The estimated time frame on extending recycled water pipe to angelica textiles is March 2011.

Figure 3.1.2.1-1 – BSS Yard (452 San Fernando Rd, LA)

2. 10811 Chandler Blvd. North Hollywood, 91601
This facility is located adjacent to the Chandler Blvd. Bike Path *(Figure 3.1.2.1-2)* and is strongly considered for a recycled water service connection. The City of Burbank is in the design phase of installing an 8" recycled water line that would deliver to customers in the vicinity of Clybourne Ave. The estimated time frame is July 2011. LADWP is currently finalizing recycled water exchange agreement with City of Burbank. As part of this agreement Burbank has been asked to extend their recycled water line to the BSS facility located at 10811 Chandler Blvd.

Figure 3.1.2.1-2 – BSS Yard (10811 Chandler Blvd, North Hollywood.)

3.1.2.2 Street Sweepers

Sweepers transporting recycled water would need to be retrofitted to accommodate potable and recycled water. The cost of retrofitting is estimated to be $2000/truck. Presently there are eleven (11) sweepers which would be able to use the proposed fill stations and thus need to be retrofitted. LADWP has agreed to pay for the retrofitting for these sweepers. Listed below are some of the necessary retrofits.

1. Each vehicle shall have a) an air gap filling port for receiving recycled and potable water b) two separate hose connections, one for potable and one for recycled water with such connections being of different sizes to prohibit cross-connecting water sources(*Figure 3.1.2.1-1)*
2. The risers, hoses and fittings for each supply shall be color coded (painted), blue for potable and purple for recycled water.
3. The hoses, hydrants and risers for each supply shall have separate and unique fittings such that the potable system cannot accidentally be used on the recycled system and vice versa.
4. Signage shall be placed on each vehicle identifying it as carrying non-potable /recycled water and incorporate the phrase "RECYCLED WATER – DO NOT DRINK".
5. Vehicle or equipment carrying recycled water used for street sweeping shall be restricted from delivering potable water for human consumption unless CDPH procedures for cleaning and disinfection are followed.
6. Street sweeping shall not result in significant ponding or runoff.

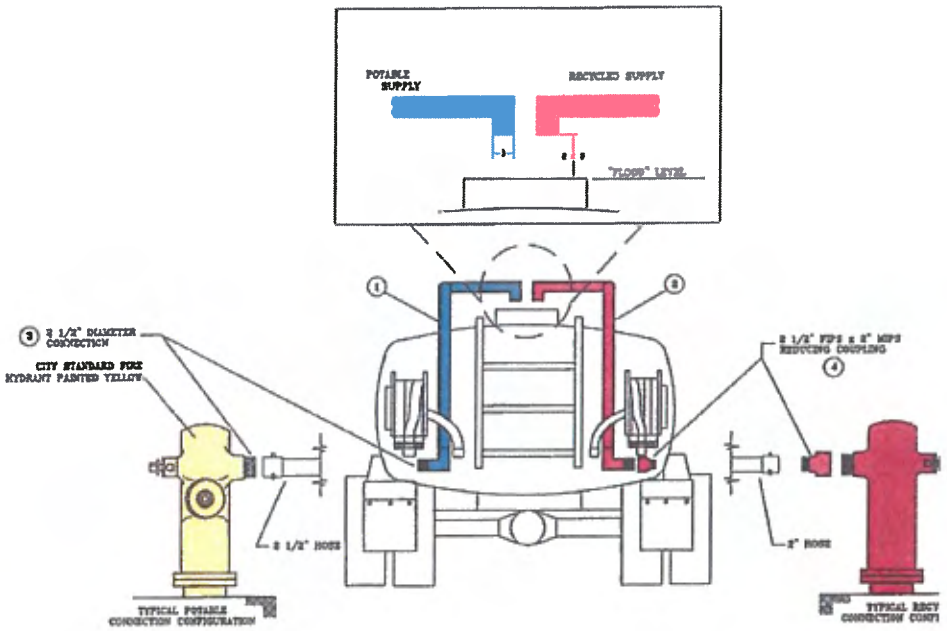


Figure 3.1.2.2-1 - Schematic of a Sweeper truck from City of Inglewood.

3.2 Schedule

Table 3.2-1 lists some of the relevant events in the implementation of recycled water for street cleaning and their estimated completion date.

MILESTONES	COMPLETION DATE (EST.)
Installation of the 8 Proposed Fill Stations*	October 2010
Extension of Recycled Water pipe to BSS Yard - 452 N. San Fernando Rd, LA	August 2011
Extension of Recycled Water pipe to BSS Yard - 10811 Chandler Blvd, N. Hollywood	July 2011
Retrofitting of the first truck by GSD – Fleet Maintenance	September 2010
Retrofitting of the remaining ten (10) Sweepers by LADWP personnel	December 2010
Training and education of BSS employees/staff	December 2010
Approval of county permits	December 2010

Table 3.2-1- Schedule of key events

4.0 COMMUNICATION PLAN

4.1 Plan Agreement

It is advised that a plan agreement be created and signed by the involved parties. The plan agreement would identify all the stakeholders and their role.

4.2 Training/Education

Recycled water user guidelines for street cleaning are currently being prepared by the Water Recycling Regulatory Group which outlines the allowed use, requirements for use, best management practices and health and safety guidelines. A draft of this handout is included in this report (*Attachment 4.2-1*). These guidelines are expected to be completed before recycled water is implemented for street cleaning. LADWP will provide training and education to the truck operators and any other parties that would be discharging recycled water. Topics covered in the training would include:

- What is Recycled Water?
- Everyday operations
- Prevention of unapproved uses
- Runoff management
- DPH guidelines overview

4.3 Meetings (Evaluations)

It is recommended that all involved parties meet at a minimum of once a month to discuss any concerns and provide updates/feedback on recycled water use.

5.0 ADDITIONAL USES OF RECYCLED WATER BY BSS

In addition to street cleaning, recycled water could be used within the Bureau of Street Service facilities for truck washing and irrigation. Some BSS facilities have tree lots which are looked after by the Bureau's Urban Forestry Division (UFD). The Urban Forestry Division also uses watering trucks to manually water trees in parkways throughout the city.

Recycled Water Use - Street Sweepers

Districts & Plants	Yard Locations	Number of Sweepers in use	Estimated daily Water use (gal/day)*	Estimated yearly water use (AFY)**	Closest Recycled Water Line (Existing)	Proposed Fill Stations in close proximity of BSS Yard
Bay Harbor	1400 N. Gaffey St, San Pedro 90731	6	5400	4.308717788	16" recycled water line is located at Harry Bridges and Avalon Ave. Approx. 3.3 miles NE of yard. Yard is in close proximity to the Terminal Island Treatment Plant.	Yard is approx. 3.0 miles SW of the proposed fill station (455 Ferry St. San Pedro, 90731). Currently, fill station is out of the way for sweepers to utilize.
	8602 Denver Ave, LA 90037	8	7200	5.744957051	Off Manchester Ave, west of 110 FWY. No recycled water line in close proximity.	None
	4206 S. Main St, LA 90003	8	7200	5.744957051	Near USC. Currently no recycled water line in close proximity. Master Plan team is looking into installing a satellite facility near USC.	None
	5860 S. Wilton Pl, LA 90003	11	9900	7.899315945	Near Slauson and Van Ness Ave. No recycled water line in close proximity.	None
	2000 Abbott Kinney Bl, Venice 90018	6	5400	4.308717788	Near Venice Beach. No recycled water line in close proximity.	Yard is approx. 4.5 miles NW of the proposed fill station (12001 Bluff Creek Dr, 90291). Currently, fill station is out of the way for sweepers to utilize.
North Central	**452 San Fernando Rd, LA 90031**	**12**	**10800**	**8.617435576**	**Recently extended 16" recycled water line to service Cypress park. Cypress Park is 0.7 miles north of yard. See Comment #1 under Retrofitting existing facilities - Yards & Sweepers for more details.**	Yard is approx. 0.8 miles south of the proposed Fill Station (2630 Pepper St, 90065). BSS estimates 7 sweepers could use this fill station 3-5 times per week.
	6th St, LA 90021	8	7200	5.744957051	In Downtown LA. No recycled water line in close proximity.	None
	1274 W. 2nd St, LA 90031	5	4500	3.590598157	In Downtown LA. No recycled water line in close proximity.	None
	6640 Romaine St, LA 90038	11	9900	7.899315945	Off Santa Monica Blvd. & Highland Ave. No recycled water line in close proximity.	None
	1274 Cochran Ave, LA 90019	8	7200	5.744957051	Yard is adjacent to Little Ethiopia. No recycled water line in close proximity.	None
	2231 Fair Park Ave, LA 90041	3	2700	2.154358894	Closest POC to Recycled water line is ~ 3.5 miles SW of Yard, at intersection of Glendale Ave. & San Fernando Rd.	None
East Valley	11165 Missouri Ave, W. LA 90025	6	5400	4.308717788	Yard is close to UCLA. No recycled water line in close proximity.	None
	9401 Wentworth St, Sunland 91040	6	5400	4.308717788	Yard is close to the Hansen Dam. Closest POC is ~ 4.5 miles SW of yard.	Yard is approx. 5 miles NE of the proposed fill station (9803 San Fernando Rd, 91331). Currently, fill station is out of the way for sweepers to utilize.
	10811 Chandler Blvd, N. Hollywood 91601	**18**	**16200**	**12.92615336**	**Yard is recommended for recycled water since it is adjacent to the Chandler blvd. bike path. See Comment #2 under Retrofitting existing facilities - Yards & Sweepers for more details.**	Yard is approx. 5 miles NE of the proposed fill station (16280 Vanowen St, 91406).Currently, fill station is out of the way for sweepers to utilize.
West Valley	1479 Stoner Ave, W. LA 90025	4	3600	2.872478525	Yard is close to UCLA. No recycled water line in close proximity.	None
	6015 Baird Ave, Tarzana 91356	24	21600	17.23487115	Yard is close to Balboa Sports Center. Closest POC is estimated to be 3.5 miles NE of yard at Woodley & Victory Blvd to a 30" line.	Yard is approx. 3.5 miles SW of the proposed fill station (6335 Woodley Ave, 91406). BSS estimates 4 sweepers could use this fill station twice a week
Plant 1	2484 E. Olympic, LA 90021	7	6300	5.02683742	South of the FWY 10, 60, 5 junction. No recycled water line in close proximity.	None
Plant 2	12256 Sherman Way, N. Hollywood 91605	10	9000	7.181196314	East of the 170 HWY, off Sherman Way. Closest POC is near Balboa Blvd, approx. 7 miles SW of yard.	None
	TOTAL:	**161**	**144,900 gal/day**	**115.62 AFY**		
***Assuming each Sweeper truck operates 5 days a week or 260 days/year.*						
***Assuming each Sweeper truck operates 5 days a week or 260 days/year.*						

Table 3.1.2.1-1 – Estimated recycled water use per BSS facility.

LADWP Water Recycling

Recycled Water User Guidelines

Attachment 4.2-1

STREET CLEANING

ALLOWED USE

The California Code of Regulations, Title 22 Section 60307(b)(7) allows the use of recycled water for street cleaning on public roads. In addition, this Guideline has been approved by the California Department of Public Health for cleaning streets and outdoor work areas with recycled water (pending DPH). Recycled water is NOT allowed for drinking or washing. For information about distribution and filling locations of recycled water for street cleaning, please contact LADWP Water Recycling Group at **(213)367-3637**.

REQUIREMENTS FOR USE

- Vehicles used for collecting and distributing recycled water for street cleaning shall:
  - Have an adequate tank and plumbing system to ensure that leaks and ruptures will not occur due to normal use.
  - Have either a) an air gap filling port for receiving either recycled or potable water or b) two separate hose connections, one for potable and one for recycled water, which such connections being of different sizes to prohibit cross-connecting water sources.
  - Have color-coded(painted) risers, hoses, and fittings: blue for potable water and purple for recycled water.
  - Have hoses, hydrants, and risers for each supply shall have separate and uniquely sized fittings to prevent accidental connection between the potable and recycled systems.
  - Be equipped with spray heads/nozzles configured and maintained to minimize runoff, ponding, and spray drift.
  - Be equipped with control valves configured such that recycled water can be applied in a controlled fashion.
  - Be designed and maintained to minimize recycled water loss during transit
  - Be clearly labeled as specified in the "Signage Requirements" section on Page 2.
- Prior to use, LADWP Water Recycling Section will inspect the Users' vehicles to ensure compliance with the requirements listed above.
- User must maintain a log recording details of all recycled water deliveries (date, location, volume, and end use).
- Any storage facility containing recycled water for reuse applications shall be managed in a manner to control odor.
- Vehicle or equipment carrying recycled water used for street sweeping shall be restricted from delivering potable water for human consumption unless CDPH procedures for cleaning and disinfection are followed
- Use areas shall be designed and operated using Best Management Practices (BMPs) as stated below, or as revised by LADWP, to protect waters of the State and to prevent recycled water spray, mist, or surface flow from either leaving the use area or reaching:
  1. Any surface water with year-round flow located adjacent to the Use area;
  2. Areas with public access (e.g. dwellings, designated outdoor eating areas, or food handling facilities);
  3. Drinking fountains, unless specifically protected with a shield device.

BEST MANAGEMENT PRACTICES

- Position spray heads/nozzles towards the street/work areas at all times to prevent runoff into the storm water drain system
- Do not apply recycled water for street cleaning during strong winds.
- The application method must not cause significant ponding or runoff of water, such as through excessive application volumes, use after heavy rains, or application to excessively uneven surfaces.
- Conduct visual inspections to determine the necessary delivery rates and volumes. If runoff cannot be restricted by application method, then the use of recycled water street cleaning operations must be suspended.
- Display signage on vehicles(see "Signage Requirements" on Page 2).

LADWP Water Recycling

Recycled Water User Guidelines

Attachment 4.2-1

STREET CLEANING

HEALTH AND SAFETY GUIDELINES

- All workers that are likely to be present during street cleaning activities are required to have training in the proper use of recycled water. Supervisory personnel should be held accountable to ensure that employees are using recycled water properly.
- It is the responsibility of the User to train all operations personnel so they are familiar with the use of recycled water. Training for operations personnel should include, but not be limited to, awareness of the following:
  1. Working with recycled water IS SAFE if common sense is used and if appropriate regulations followed.
  2. Recycled water, although highly treated, is non-potable.
  3. Conditions such as ponding and runoff are not allowed.
  4. Good personal hygiene must be followed (e.g. wash hands after working with recycled water, do not consume food or drink while working with recycled water, cover wounds to prevent contact with recycled water).
  5. Cross-connections between the recycled water system and the potable water system must not be allowed to exist.

DID YOU KNOW?

Tertiary treated recycled water is considered safe for full-body contact

California Code of Regulations Title 22, 60305(a) & 60301.220

Report any accidental spills of recycled water or personal hygiene issues that have received medical attention to LADWP for action and record keeping. LADWP will initiate normal incident management procedures.

SIGNAGE REQUIREMENTS

Vehicle-Street Sweepers

Each filling system must be clearly identified as potable or recycled. Recycled water pipeline and appurtenance will be identified using purple vehicle-mounted recycled water for street cleaning, the User must install, maintain, and keep in place three magnetic signs (on both sides and the rear of each vehicle, at the outlet) indicating that recycled water is in use. The signs must contain the words "RECYCLED WATER – DO NOT DRINK" in 2-inch high letters on a purple background and the "Do Not Drink" symbol, as shown to the right. All labels and signs must be placed where they can easily be seen by the personnel using the vehicle.

Other Equipment and Devices

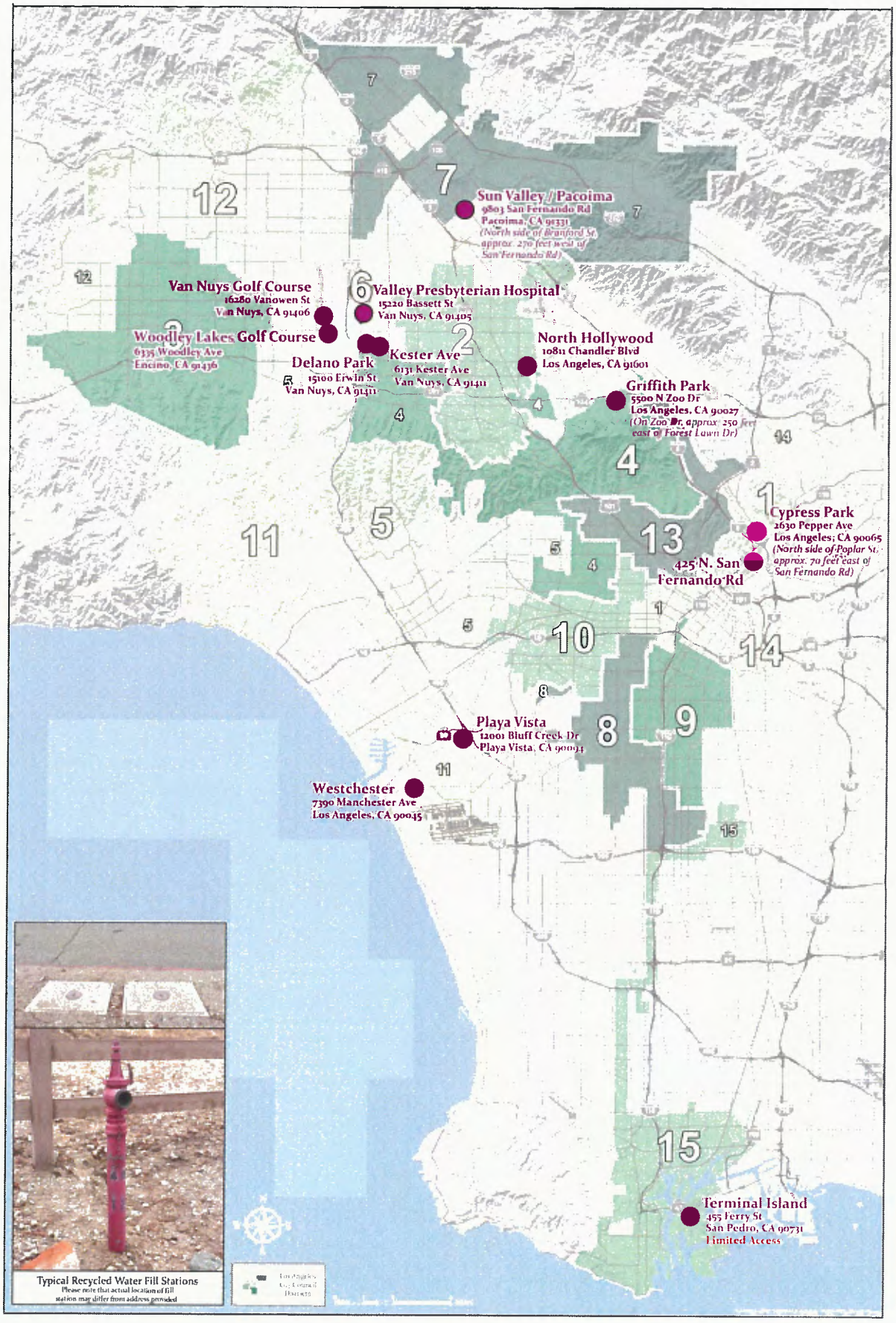
All stationary pipe, materials, and equipment used to carry recycled water onsite (such as pipes, air vacuum relief valves, pressure reducing valves, pumps, pump control valves, etc.) must be properly identified. If the User installs any stationary recycled water equipment, information on required markings and tagging is found in the 2005 Los Angeles County Reclaimed Water Advisory Committee Recycled Water User Manual (RW User Manual), Page 23.

USER AGREEMENTS

All potential recycled water users in the City of Los Angeles must meet LADWP's requirements and must enter into a written agreement with LADWP. LADWP reserves the right to take any action necessary with respect to the operation of the User's onsite recycled water operations in order to safeguard public health and to meet applicable regulations and permits. For information on User Agreements, refer to the RW Users Manual, Pages 8 and 33.

The City of Los Angeles has safely used recycled water since 1979 for irrigation and industrial purposes.

For more information about recycled water, treatment processes, and availability in the City of Los Angeles, please contact the LADWP Water Recycling Group at (213) 367-3637 or (213) 367-4141 or visit www.ladwp.com


Sun Valley / Pacoima
9803 San Fernando Rd
Pacoima, CA 91331
(North side of Branford St, approx. 270 feet west of San Fernando Rd)
Van Nuys Golf Course
16280 Vanowen St
Van Nuys, CA 91406
Valley Presbyterian Hospital
15220 Bassett St
Van Nuys, CA 91405
Woodley Lakes Golf Course
6335 Woodley Ave
Encino, CA 91436
Delano Park
15100 Erwin St
Van Nuys, CA 91411
Kester Ave
6131 Kester Ave
Van Nuys, CA 91411
North Hollywood
10811 Chandler Blvd
Los Angeles, CA 91601
Griffith Park
5500 N Zoo Dr
Los Angeles, CA 90027
(On Zoo Dr, approx. 250 feet east of Forest Lawn Dr)
Cypress Park
2630 Pepper Ave
Los Angeles, CA 90065
(North side of Poplar St, approx. 70 feet east of San Fernando Rd)
425 N. San Fernando Rd
Playa Vista
12001 Bluff Creek Dr
Playa Vista, CA 90094
Westchester
7390 Manchester Ave
Los Angeles, CA 90045
Terminal Island
455 Ferry St
San Pedro, CA 90731
Limited Access
Typical Recycled Water Fill Stations
Please note that actual location of fill station may differ from address provided

Recycled Water Fill Station Log

Customer: _____ **Primary Contact:** _____

Billing Address: _____

Contact Phone: _____ **Email:** _____

Vehicle Description: _____ **Fill Capacity:** _____ **Gallons**

Date	Recycled Water Fill Station Location (Address)	Number of Fills

Mail to: Los Angeles Department of Water and Power
433 East Temple Street, Building 5, Room 101
Los Angeles California 90012
Attention: Recycled Water Fill Stations